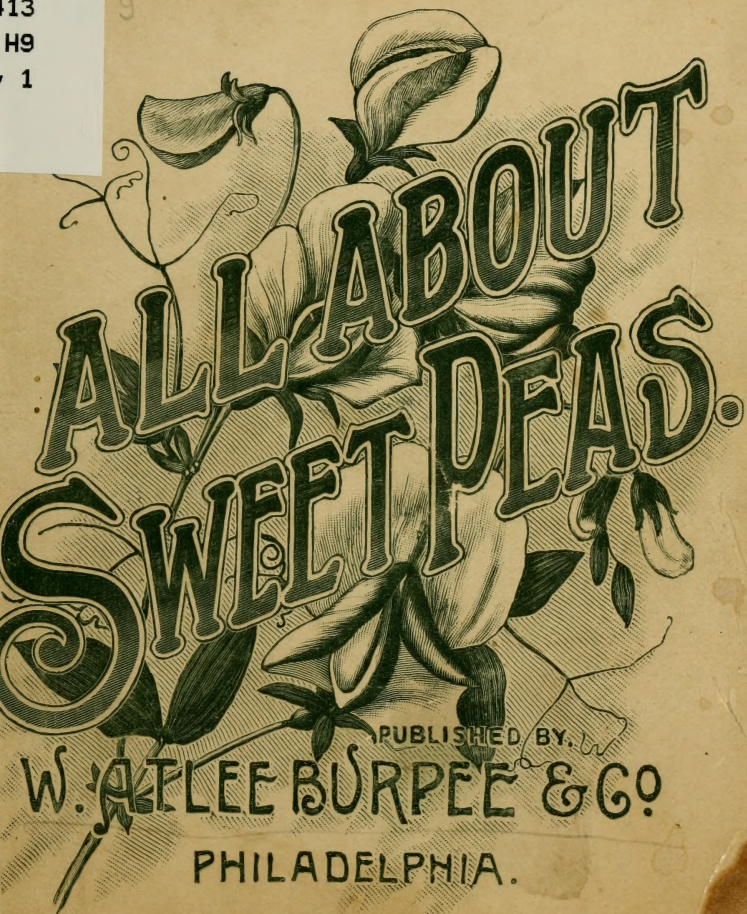


REVISED AND ENLARGED.

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ALL ABOUT SWEET PEAS.

PUBLISHED BY,

W. ATLEE BURPEE & CO.

PHILADELPHIA.

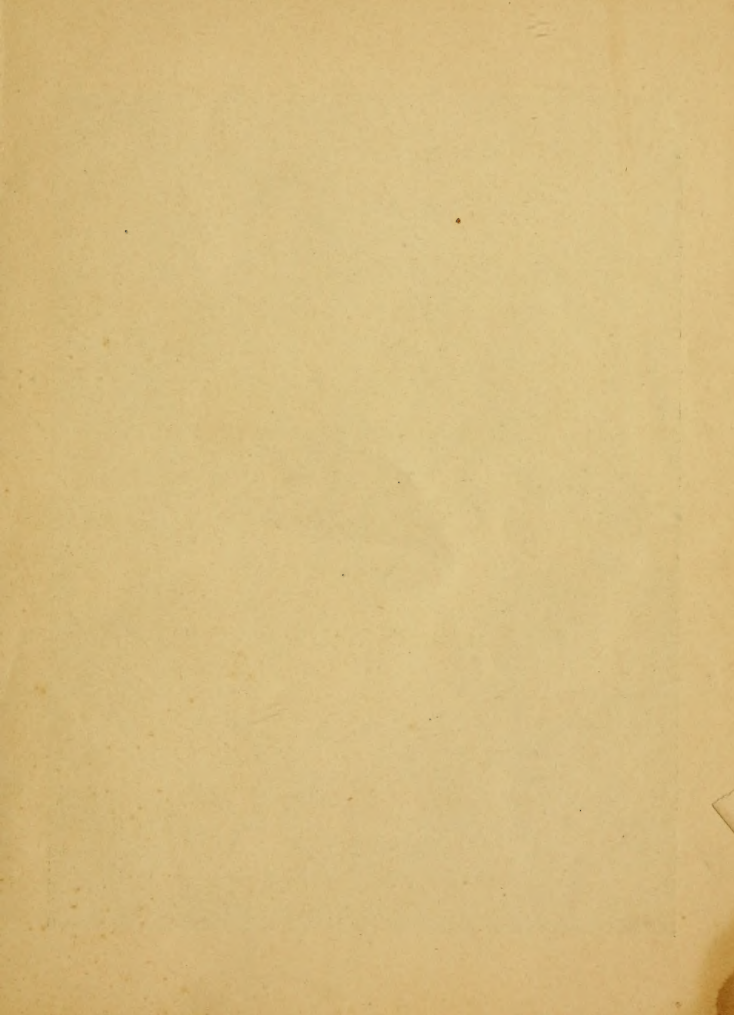
SWEET PEAS.

THE FRAGRANT,
FAVORITE FLOWER.

HAVING foreseen the wonderful popularity destined for SWEET PEAS, we steadily prepared ourselves until we are accepted

Headquarters for Seed
of the best varieties.

W. ATLEE BURPEE & CO.,
SEED GROWERS,
PHILADELPHIA, PA.





ALL ABOUT SWEET PEAS

A COMPLETE EPITOME OF THE LITERATURE
OF THIS FRAGRANT ANNUAL

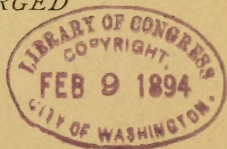
BY

REV. W. T. HUTCHINS

REVISED AND ENLARGED

PUBLISHED BY
W. ATLEE BURPEE & CO.
PHILADELPHIA

1894



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WM. F. FELL & CO.,
ELECTROTYPERS AND PRINTERS,
1220-24 SANBOM STREET,
PHILADELPHIA.

PREFACE.

It has fallen to the writer's lot,—and has been welcomed as a delightful diversion,—to do pioneer work in the literature of Sweet Peas. Only the briefest paragraphs on the subject had found their way into the floral papers, when, less than three years ago, the writer, who had adopted the culture of this charming flower as a specialty, began to let his enthusiasm out in articles for the press.

The literature of Sweet Peas could not have begun at a more opportune time. Mr. Eckford's successful work in improvement and selection had begun to be recognized in this country, and down Boston way, at least, people had learned something of the magnificence revealed in a successful hedge of Sweet Peas. But still the introduction of the Eckford novelties in this country seemed to "HANG FIRE."

Only the enterprise of some thoroughly national

seed firm was needed to take up this beautiful flower, and to make its rare possibilities known throughout the land.

Indeed, people bought their Sweet Peas mixed and very cheaply, and some seedsmen took liberties with the names of many varieties, so that, beyond the fact that the flower was a favorite garden annual, little was said or known of it.

But the new era began in this country as soon as the more distinct Eckfords found purchasers who gave them thorough trial.

The success with these has awakened a deeper interest in the culture of the flower and has brought the older varieties into greater prominence and demand.

The Sweet Pea has risen to a new and well-deserved dignity, and now takes rank among our most carefully cultivated flowers.

This new book is the first attempt made in America to treat the culture of the flower with some degree of thoroughness, and the writer takes great pleasure in having the book brought out by Messrs. W. Atlee Burpee & Co., whose enterprise in the selection of

seed strains, and in making known to the flower-loving public of America the rare merits of this delightful annual, has been signally successful and liberal.

The writer would especially say that he has written this book with entire impartiality, and has tried to have the work as complete as if he were publishing it himself. It is to be hoped that better books will follow as our knowledge increases, but in this work as it is the writer has tried to make the culture of a neglected but beautiful flower as inviting as possible.

W. T. HUTCHINS.

INDIAN ORCHARD, MASS., Nov. 28, 1893.



THE QUEEN.

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TO A SWEET PEA.

CHAS. I. JUNKIN.

Sweet little flower, who cares to sing thy praise?

Who crowns thee with the gem of glowing words?
Thou'rt but a simple thing, of every day,
Familiar as the myriad-numbered birds.

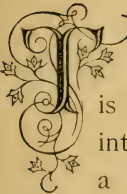
Thou canst not match the Lily's purity ;
The royal Rose bedims thy utmost glow ;
And far Japan has sent her fairest queen
To bid thee bow thy head and bend it low.

Thou'rt built of common earth ; no royal blood
Flows richly through thy humble, peasant veins ;
Not thine the palace, better thou shouldst keep
Thy lowly place beside the village lanes.

And yet, sweet heart, thou hast a fairer place
Than princely blood or grace could give to thee,
A quiet resting place in gentle hearts
That love thee for thy sweet simplicity.

Let high-born flowers contend to win the crown ;
Let nobles strive to seat them on the throne ;
Do thou, sweet flower, in quiet, fragrant peace,
Possess the loving hearts that are thine own.

INTRODUCTION.

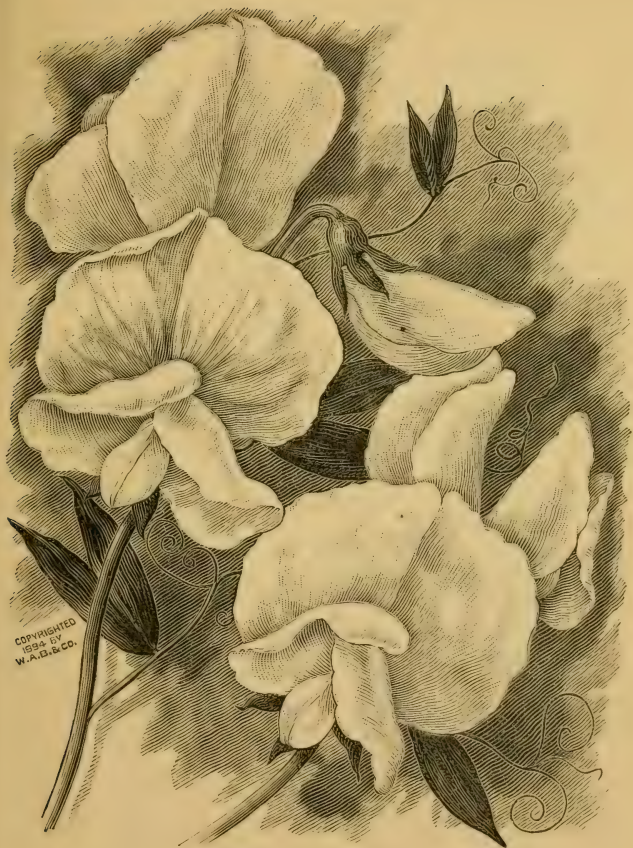
HE POET WORDSWORTH speaks of "the flowers of Sicily." The Sweet Pea is a native of that island, and was brought into notice nearly two centuries ago.* As a favorite garden annual it has long been familiar to us, although its cultivation has really but just begun. Since coming from its native Sicily home, where nature gave to it the pink-and-white beauty which has always been so popular, it has by the florist's art been developed into other colors, such as scarlet, purple, blue, brown, etc. But now, in the hands of a specialist like Mr. Eckford, of Shropshire, England, who has for seventeen years devoted himself to its improvement, it is like a new discovery, and is already in the front rank as a fashionable

* Curtiss' BOTANICAL MAGAZINE, date 1793, says the variety known as Painted Lady originated in Ceylon, but names Sicily as the reputed native home of the Sweet Pea.

flower, with unlimited promise as to color, form, and size. It is the coming flower.

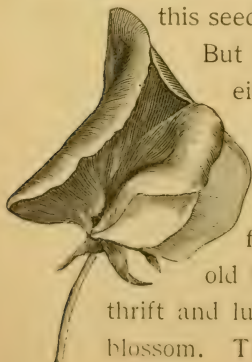
Paxton's English Botanical Dictionary gives a list of about sixty species of the genus *LATHYRUS*, of which *LATHYRUS ODORATUS*, our beautiful Sweet Pea, is one. Some of the other species are coming into favor, like the Perennial Pea (*Lathyrus latifolius*), which can now be had in several varieties, and others which are better known in England than here ; but the queen of them all is doubtless the Sweet Pea. The tiny, bright blue Pea, known as Lord Anson (*Lathyrus carnallus*), is rather pretty, and desirable in a mixed row, as is also the crimson Pea, *Lathyrus tingitanus*. These latter begin to bloom earlier than the Sweet Pea. The Lord Anson, white, is worthless.

In this country the Sweet Pea wave now indicates that its day is come. And while the popular interest may recede somewhat, yet this fragrant annual cannot be otherwise than a popular flower, and the improvements made in its culture will give to it a permanent rank among exhibition flowers. Heliotrope and Mignonette have little besides their fragrance to



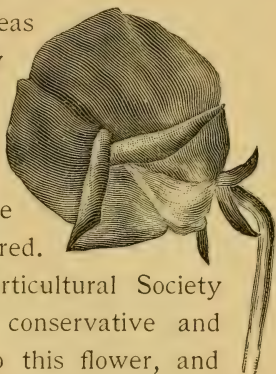
MRS. GLADSTONE.

commend them, but the Sweet Pea rivals them in perfume, and then for size of blossom and range of color compares with the finest flowers that depend upon beauty alone. If mass of color is wanted in a bouquet, an abundance of fresh blooms wait every morning to be picked, and if grace and airy lightness are desired, nothing can surpass this queenly flower. That it is everybody's flower is seen in the fact that the largest seed-houses handle tons of the seed every year. This country now even exports the seed to England. Probably two hundred acres in California, New York, and Michigan were devoted this year to the growing of this seed.



But still few comparatively have seen either the finest Eckfords or, indeed, any Sweet Peas grown to perfection. It marks an epoch in the life of a flower lover when he first succeeds in growing this new-old flower so as to bring out its true thrift and luxury of vine and lavish wealth of blossom. The writer will always remember

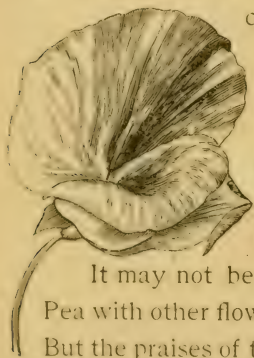
the day when he saw Sweet Peas thus grown for the first time by a gentleman who for several years carried off the first prize from the Boston Annual Exhibit; and that was before the finest Eckfords had appeared.



Even the Massachusetts Horticultural Society have followed a somewhat conservative and stereotyped rule in regard to this flower, and a few seed-houses only have timidly kept pace with the new introductions. This is not strange, for it has not only needed a specialist in England to introduce the new varieties, but specialists on this side to pay the price of the seed the first year, and succeed in testing them. The Hampden County Horticultural Society, of Massachusetts, gave a Sweet Pea show at Springfield in July, 1893, which came nearer to a complete exhibit of all the varieties than any ever held in this country. And this is but the beginning of the attention this flower will receive for exhibition purposes.

But its real value is in its claim of being the

people's flower. The cheaper mixture furnishes the humblest cot with a complete flower garden, and no fair lady of fortune was ever kissed by sweeter lips than the royal and titled beauties that are now taking the places of the old plebeian varieties. Already the price of some of the finest new Eckfords is within the reach of everybody. Three years ago the writer suc-

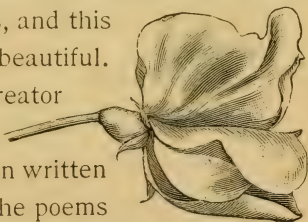


ceeded in nursing three plants of the beautiful lavender Countess of Radnor into bloom, but this year a fine stock of this variety will be offered at a price that will make it a general favorite. And so with others.

It may not be generous to compare the Sweet Pea with other flowers. All have their good points. But the praises of this flower, when justly sung, will appeal to those who distinguish between the loud and flashy gaudiness of nature's coarser flowers, and those whose sweetness and adorning are in their delicate grace and simplicity. The Sweet Pea was first introduced like a blushing virgin in chaste pink and white,

and all the new shades are either of this soft, pure coloring, or else of the richest dark shades that have nothing loud in them. What will suggest the most brilliant complexion like the Blanche Ferry? And then the beautiful range of pink shades, the dainty edgings and shadings of blue, and, if one wishes, the intensest scarlet and crimson, like glowing coals of fire. And then from a glistening white as pure as the driven snow to deep blue and darkest maroon the broad range is enjoyed.

The fragrance of the Sweet Pea defies the perfumer's art. Shut your eyes, and this flower is still wondrously beautiful. The sweetness which the Creator has put into it delights the very soul. Poems have been written upon Sweet Peas, but not the poems that are to be. No tribute thus far paid to its native beauty or simple modesty even, as an old flower, can now do justice to its merits. It commands its way among the rich, and yet seems on a mission sent to convey the most spiritual suggestions to the lowliest



child. What can better adorn a pulpit or cheer a sick-room?

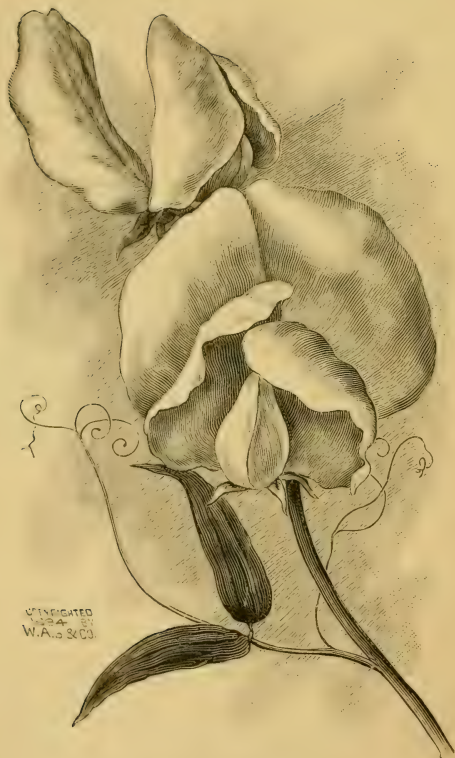
As a corsage bouquet, or held in a dainty hand, this flower outshines any cosmetic, and excels any bottled perfume. To the successful grower of a hedge of even moderate length it will be the pleasantest daily task to keep the blossoms picked, and the whole neighborhood may share the pleasure in the distribution of bouquets. From June to October



ber the writer is not without blossoms for a day. Walking through this bower of beauty, as the names become familiar, is like being received at court. In royal grace the Sweet Pea stands to greet you, and is not like the Pansy, to whose impish face you must stoop and brush the dirt off.

Mr. Eckford, in a recent letter, writes: "I am much pleased and delighted to know that my favorite flower, the Sweet Pea, is so much admired and appreciated by such a shrewd and cultivated people as the

Americans, and of whom a prominent characteristic is that whatever they approve they warmly and eagerly adopt. This, I think, is a grand trait in the American character; and the Sweet Pea mania which has sprung up in recent years is a grand proof of the cultivated taste of the florists and flower-loving public of America. It is the sweetest of all sweet flowers, and, in addition to its glorious fragrance, revels in the most exquisite and diversified tints of coloring; and, moreover, the possibilities of the Sweet Pea are only in their infancy, and with the improved system of cultivation now adopted it will hold its own against all comers as the popular summer flower."



MRS. ECKFORD.

A WORD OF CHEER.

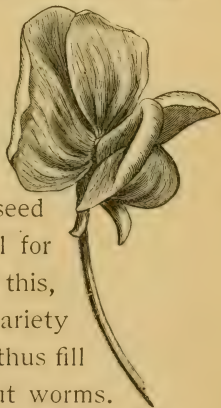
Since this book is chiefly for amateurs, a word to those who have lost heart in trying to grow Sweet Peas will be in place. Don't give up. Perhaps your interest brightened up last spring, and so much was said about them you thought some new charm or patron saint had cast a spell over them, and all you would need to do would be to sow the seed, and wait for the bright picture of the seed catalogue to bloom right out before your eyes. You invested in seed, and about half of it came up. And while you were wistfully watching to see the thin row of plants grow, behold ! the cut worms took half of them. Half-heartedly, you provided something for the few remaining vines to climb on, when for no apparent reason vines that looked thrifty yesterday are drooping to-day, and day after day you see them turn yellow and die. And in this I am not describing the experience



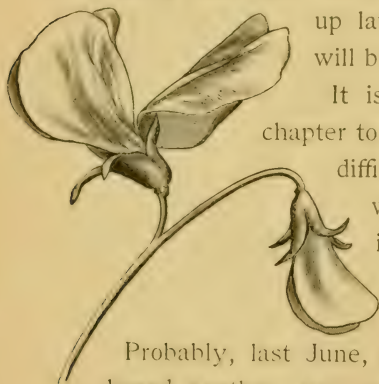
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TYPE OF THE SENATOR.

of those who know little about floriculture, but of many who have mastered other flowers. All around me are people whom I have supplied with the same seed I use myself, and who see just how I grow Sweet Peas, and yet their vines often look like the scattering hairs on a bald head. Now, don't blame the seedsman. The seed was certainly fresh. And, any year, if half the seed germinates, that is enough. Almost every year I have a section of a row here and there of seed that I know is only one year old fail for some reason to germinate. To meet this, I plant little extra rows of each variety for the purpose of transplanting, and thus fill all vacant places. Then come the cut worms. We are very apt to say, "Perhaps there won't be any cut worms this year." But there will be, and very likely a whole colony of them. But what of that? I left my eight hundred feet of rows for three days right in the cut-worm season in the hands of a little girl to hunt for them. A glance of



the eye each morning will show you the suspicious signs of the cut worm. Their depredations last but a few days. Make it a capital offense for one plant to be cut down. Unless you love to scratch in the dirt get some bright boy or girl to poke the worms out of their hiding place each morning. Spade your ground up late in the fall and there will be fewer cut worms.



It is not the object of this chapter to give the remedy for each difficulty, but to say to those who have failed, success is close at hand if you will patiently look at the situation.

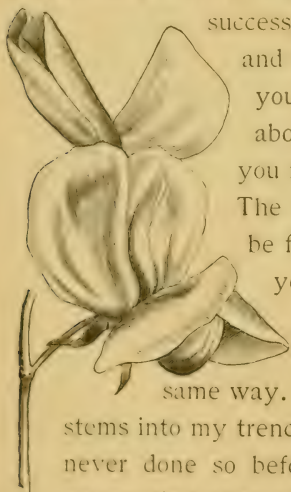
Probably, last June, as one dubious fact followed another, you said, "Well, I won't try again," because without calmly considering each difficulty by itself you lumped the whole together in a vague way that magnified the real size of it, and you were discouraged at the time, and not in a mood to study the problem point by point. Success with this

flower is certainly worth the continued thought and persistent effort you will need to give it.

I hear you say you followed the rules. But did you season the rules with a little common sense, so as to adapt them to your case? Who can make rules fit all circumstances? For instance, an experienced English seedsman said he followed my rule of putting soapsuds on his Sweet Peas, and he shouldn't do it again, for it nearly killed them. He thought English soap must be stronger than American. But I suspect he applied the soapsuds when the vines were too young and tender, before they would bear strong feeding. You don't feed a baby as you would a strong boy or a working man. Read the chapter on the slow growth of the Sweet Pea, and use judgment in the way you try to force it along. If you made an unscientific sort of a spurt last year, just end up all that thoughtless kind of floriculture, and find the pleasure there is in a little mastery of difficulties, and



in answering for yourself in a thoughtful way the questions that come up. Don't cultivate so beautiful a flower at a venture and have three failures for every



success, but get down to business

and make success the rule. After

you have learned the points

about fertilizers, for instance,

you might say you have no rules.

The elements of plant food are to

be found in so many forms that

you may never supply your

potash and phosphoric acid

and nitrogen twice in the

same way. This fall I shall put tobacco

stems into my trenches for potash. That I have

never done so before is nothing. It stands to

reason that they will make good plant food for

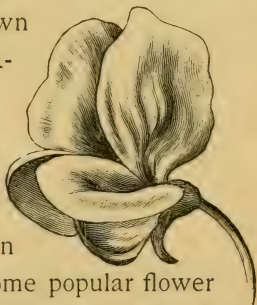
Sweet Peas as well as for other crops.

But you want simple rules to follow. Ah! you will be likely to blame the man who made the rules, although he has boiled his best experience down in making those rules. Go back to some old way if you

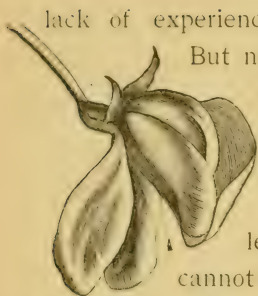
have had better success thus ; but this is probably true, that as our most popular flowers are carried up to higher forms by the florist's art, only scientific rules will succeed.

Now you will start in again this year with a purpose to study principles rather than follow rules. We shall not try to boil the rules down in this book, but discuss the reason for this and that.

Do what you do thoroughly, if you sow but a nickel's worth of seed.



Have you thought how, when the fever is on, people go into some popular flower as they do into the poultry business? They have read just how to do it, and are going to astonish all their neighbors by immediate success. If expensive seed will do it, then the price paid makes their hearts bound with hope. And of fertilizers there shall be no lack. And they seem to think they can inject their sudden ambition right into the little, dry seeds, and hurry them along. And they propose to make up for



lack of experience with energy and enthusiasm. But nature is a great plodding machine, and is no friend of sudden spurts. In this, as in other things, we pay a dear price for some lessons. Simple as they are after once learned, the inspiration of a prophet cannot teach them, and only by making ourselves the patient pupil of nature can we, year by year, get a practical knowledge. And every new spring-time we come back to our task with sobered purpose and humble submission to nature's jealous laws.

Try again this year ; you may lead the way to permanent success.



INDIGO KING.

A STUDY.

The Sweet Pea is a queenly flower in all its habits. Its favors are unbounded to those who make a conquest of its culture, and there are no florist secrets to bring it into most luxuriant bloom. It laughingly says, "Win me if you can," and yet there is a sweet condescension in its nature that makes it take as kindly to the cottage garden as to the skilled culture of the mansion grounds. Study the points.

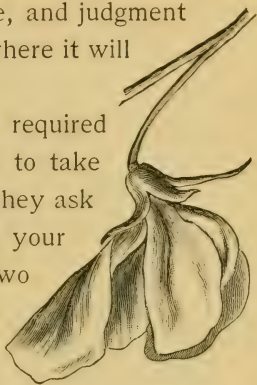
1. It is an annual. It is wonderful how you can lock all this summer luxuriance and beauty and pleasure in a little, dry seed, and lay it away in safety while the winter storms are raging.

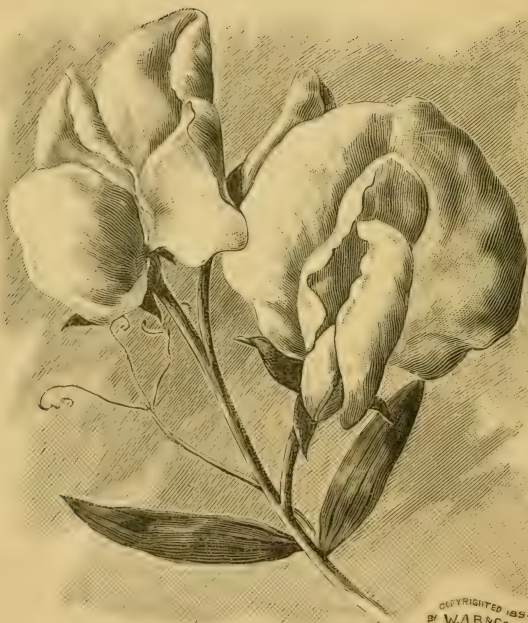
You need exercise but little care how you spade in rank manure about your perennial roots. But when will people learn how to bring an annual through its first tender stage up to that stronger period when heartier feeding is needed? The very term, annual,

suggests the extra nursing, care, and judgment needed to get the plant along where it will shift for itself.

2. The economy of ground required for Sweet Peas. You can afford to take more pains with them because they ask for only the narrowest strip of your precious garden. Take the two sides of your Sweet Pea hedge in full bloom, and you have a garden in the air ten or twelve feet wide, and all it asks is just enough soil to hold the roots. You could hardly devote a space ten feet wide to Verbenas or Phlox, and yet that would be the equivalent of your row of Sweet Peas. But to offset this economy of ground you must take all the more pains in preparing it.

3. They have a growing season of six months. Before the spring frosts have gone the Sweet Pea germinates and sends up its great shoot, and on through the summer drought and dog days, on through September rains, till the mellow days of October alter-





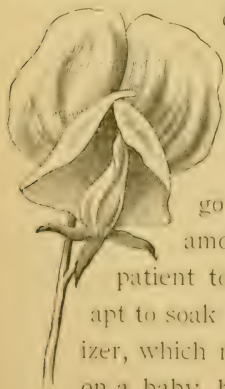
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DUKE OF CLARENCE.

nate with cool and even frosty nights, the green vines and beautiful blossoms of this flower adorn an unrivaled length of season. This length of season and thriftiness of growth at once suggest to the florist that the soil must be rich and deep to sustain the long growth of the plant.

4. The study of the root. I never examine the root of a thrifty Sweet Pea vine without surprise. It is remarkably small to feed such a growth of vine. Examine it at different stages. The first week or two after it germinates it has a root out of all proportion to its tiny top. By the time the plant has a top an inch high it has sent a long, slender tap-root down three or four inches. That first root is an index of the nature of the vine and seems to say, "I must begin at once to get ready for the summer drought." But pull up a full-grown vine, and you find that after all, for such a rank growth, the root has remained comparatively small. Now that tap-root, which gets to be six or seven inches long, indicates the rule which we follow of deep planting; and that tap-root will probably go as deep as the soil allows. But

when you see a thrifty mass of vines in August you would naturally expect to find quite a mass of fibrous roots to support such a growth. And yet, as a rule, there are not many, and it looks more like a root that would starve instead of feed such a vine. This latter fact points to another thing that is fully verified by experience. The Sweet Pea is a slow grower. It has to be in order to go through so long a season. You will wonder all through the month of May what it is doing ; it grows so slowly. And people are then apt to overfeed it in trying to get it along faster. For

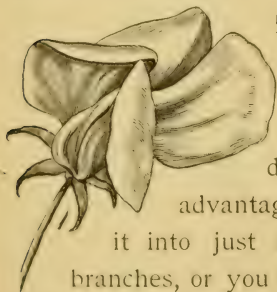


days it seems almost at a standstill. Not until well along into June does the root appear to feed rapidly. I believe that a scientific study of the Sweet Pea root will go far toward making success the rule among amateurs in its culture. Impatient to help their vines along, people are apt to soak them with soapsuds or stir in fertilizer, which not only acts as overfeeding would on a baby, but, when the June heat begins to

pour down, it finds around those tender vines more or less rank matter to ferment. Pour on your soapsuds when you see your vines have begun to feed rapidly, but don't do it for two months, or during April and May. Indeed, treat that root as you would a child. Put the fertilizer not where the baby roots will get burned up in it, but where in due time the strong vine will get it when needed. The Sweet Pea is too queenly a flower to be a gross feeder, and its needs deserve to be studied. Of course, these suggestions are for the amateur only, who goes about its culture more or less blindly, with such conditions of soil as make a special preparation necessary. And what is said is more to suggest intelligent thoughtfulness, rather than to give specific rules. An education in one flower like this will make success in all flowers surer.

The writer hears a great cry about the vines dying down at a certain stage. Fine-looking vines are suddenly decimated in June. As a prevention, let us begin to act intelligently right from the root. A root study certainly indicates the rule of deep plant-

ing, and as for the habit of slow growth, the root indicates that also, and suggests that we, too, go slow in fussing over them and trying to bring them along. Indeed, this slow growth is one cause of abundant bloom, for many know to their sorrow that their vines have sometimes rushed along with a rank growth without blossoms.



5. The habit of the vine. The Sweet Pea vine has a double tendency. It is a great brancher and it is an abundant bloomer. You can take

advantage of this either way, and drive it into just a rank growth of stalk and branches, or you can make it take on abundant bloom. Too much rank manure will send any tall Pea into vines. So at certain stages you can use stimulants that will set the vine into abnormal growth and stop the bloom. Probably if we did not practice deep planting, and should disturb the roots by hoeing, we should start up a new growth which would check bloom. But Mr. Eckford would say, "Press the soil

firmly about the roots and don't disturb it." Have the fertilizer right and in the right place. Be at ease when you see your vines growing slowly at first, for they are getting steadied down to business. It would be a vice for them to grow fast.

Have your roots deep enough, so that your weeding will not disturb them. Put on your mulching as soon as the summer heat begins to dry the surface. Those first buds that show the last of June are a precious indication that your vines have not taken on a "fast" habit, but are going to keep you busy picking blossoms.

HOW ARE NEW VARIETIES MADE?

There is no danger of giving away any valuable secret here. The simplest way of making new varieties is to grow Sweet Peas by the acre, and be on the alert for an occasional "sport," or to develop by selection some peculiarity of which indications are seen, or to follow up some special shade, marking, or form, of which the seed of those flowers that come the nearest to what is wanted must be carefully saved each year. "Sports" give quickest results, for selection is a process of years. As to direct hybridizing, try it if you wish. You will deserve to succeed if you do succeed. You will probably get no result from crossing the pollen of one open blossom to another, for the simple reason that each blossom fertilizes itself before it is fully open.

Mr. Eckford writes as follows about his experience :—

“When I first took up the Sweet Pea there were six or eight distinct varieties in cultivation, and experts in the art, as far as I could learn, had come to the conclusion that it could not be further improved, and in the first two or three generations of the work it appeared a fair conclusion ; but I should say that I had been for many years working on the improvement of various forest flowers, and which had proved so eminently successful that a first rebuff did not deter me from further attempts, with the results some of which you are now acquainted with, and others which can only be presented to the public as I can get stocks of them. I took up the Sweet Pea in 1876, collecting six of the most distinct varieties I could find, carefully fertilizing the one with the other, year after year selecting the most promising for recrossing, keeping in view properties most desirable to develop, viz.: color, form, substance, size. At first progress was slow, but after seven or eight years’ patient working the varieties, some of whose praises you have so well sung, made their appearance.”

To any one afflicted with a sudden spurt of desire



New
Sweet Pea,
American
—Belle.

An important departure from the coloring and markings of all other varieties, being neither striped nor mottled, but distinctly spotted. This point of beauty is so novel and striking that it is instantly seen with wonder. It belongs to the very early-flowering class of Sweet Peas, of which we have so few members.

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to try this work of hybridizing, we would simply say that it is a most delicate, painstaking, and persistent process. In some flowers you need but to shake the pollen 'from one open blossom on to another. The gentlest zephyr will convey the powdery pollen from the tassels of the corn to the silk of other corn, it may be rods away, and cross fertilize it. The "busy bee" is like a winged anther carrying the pollen from flower to flower. But the Sweet Pea smiles at all this. You must skillfully begin back with the bud a third grown, and first prevent a blossom from fertilizing itself, and in due time, by such process as experience will teach you, attempt the crossing. It is very interesting to those who can pay the cost of time and patience. Hybridizing can hardly be done on the small scale of the amateur, for the reason that he must keep generation after generation of the seed he is experimenting upon. And if he succeeds in breaking up the blood of some old variety he must follow up everything that comes from it, for he cannot tell what freak it will suddenly develop. Two samples in the writer's experience this year will illustrate.

From a half dozen pods saved from a single vine two years ago the product this year was a broken up lot of about six varieties. Two years ago it was a small white with the faintest lavender shadings. This year, among three or four new developments, appeared two old varieties to which the original had borne not the remotest resemblance. There is no telling what seed from any one of those might produce next year. It shows how, when a break comes, it is a fertile source of new varieties. And out of this lot the one I prize most is one that I have lost before and may lose again. Another case is that of an unnamed "sport," the seed of which this year flew into as many as six varieties, most of them bearing resemblance to named sorts. On the other hand, my best "sport" has for five years reproduced itself ninety per cent. right along. Now that we have the Sweet Pea grown for seed in various parts of our country, very likely the differences of soil and climate will bring out new sorts, as seems to be the case of the American Belle, a California "sport" of this last season. A shallow limestone soil made the Miss

Blanche Ferry. Selection is the surest process. Out of an acre of a variety like the Primrose the seed of the deepest color may be saved from year to year, probably in time giving us a yellow that will far surpass what we now have. And so with others.

The difficulties in hybridizing the Sweet Pea are in its favor, for it goes to prove what a remarkable flower it is in reproducing itself as an annual true to seed.

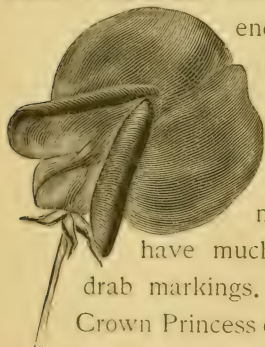
VARIETIES OF SWEET PEAS.

Do not say a Sweet Pea is only a Sweet Pea. Probably in no flower is the distinction and naming of varieties more genuine than in this. This matter of naming varieties is doubtless overdone in some popular flowers, but when you can get annuals to come true from seed they are certainly as deserving of names as the varieties of those flowers which must be propagated by cuttings. Sweet Pea seed saved from a particular variety does not reproduce "anything and everything" next year, as a *Chrysanthemum* might do. One of the first questions, when people see a collection of Sweet Peas growing side by side, is, "Don't they mix?" The best answer is to show them a blossom, and tear open the keel containing the stamens and pistil. Each blossom is at once seen to be independent. And then go further and tear open a bud about two-thirds grown, and the remarkable

fact is seen that each blossom has already fertilized itself. Even artificial hybridization is extremely difficult. While a small percentage of even the purest seed will revert to some old or kindred variety, requiring a careful "rogueing" by the seed grower, yet the writer is testing this matter every year, and finds most of the varieties very true.

How true the Sweet Pea is from seed may be seen in a variety like the Fairy Queen, a white, with very delicate veins of crimson on the standard. The solid colors are especially pure. And even a "sport" will sometimes take a fixed habit at once. On the other hand, the striped varieties, both in scarlet and purple, are somewhat inclined to shift. They vary from solid colors to the striped form. This is truer of the higher Eckford blood, the Princess of Wales and the Captain of the Blues running into each other, and the Senator and Monarch doing the same. Still, a sufficiently large percentage to establish their variety names comes true. And as in the case of the Countess of Radnor, a delicate mauve, that, as yet, it is difficult to hold, several shades may appear, but only

enough to make it interesting. Careful "rogueing" will soon give them fixed habits. Then as autumn advances there is a tendency in certain varieties to take on blotched markings. Peculiarities of soil may occasion this. Our confidence in the varieties of Sweet Peas is also strengthened by the marked differ-



ences in the seed which have been developed. Not only are there white and black seeds, but those that have the distinct mauve shadings, like the Radnor, Tennant, Violet Queen, etc., have much smaller seeds of brown and drab markings. And the Orange Prince and Crown Princess of Prussia have a smallish brown seed. While you cannot tell the Primrose from White seed, you know it from all other varieties. This classification of seed is not only an evidence of fixed varieties, but is very helpful to the seedsman in judging whether his stock of seed is true to name.

The writer has, at the request of seedsmen, tried to make the list of varieties which is published in this

book as nearly standard as can be made. It is impartial. With commendable fairness our large seed-houses are now careful to give only the names that are found on the best English trade lists.

It is a good time now to determine the standard names, for we are just at the beginning of a new era in Sweet Peas, and are likely to have American introductions, after which chaos in nomenclature will probably follow in this as in other flowers. Here and there a house on the outskirts of the trade does not seem to have found out that to-day about seventy varieties of Sweet Peas have been regularly christened with names to which they have as sacred right as the standard varieties of any popular flower. A reliable seed-house will not tamper with Mr. Eckford's list, and even where the old varieties have such prosaic names as Black, White, Light Blue and Purple, etc., no one on this side is authorized to give them any fanciful names. Sometimes the term "invincible" is appropriately given to a specially good strain. Again, in the case of the Miss Blanche Ferry vs. Blushing Bride, the difference is simply in the habit of growth. The

blossoms are identical, but the former was introduced as having a dwarf habit, and the originators are still trying to dwarf it more ; while the Blushing Bride was offered as a more thrifty grower and more abundant bloomer. The public patronage and interest will probably go more with the name Miss Blanche Ferry, although the writer prefers a thrifty growing habit and a corresponding bloom for all varieties. Whatever we

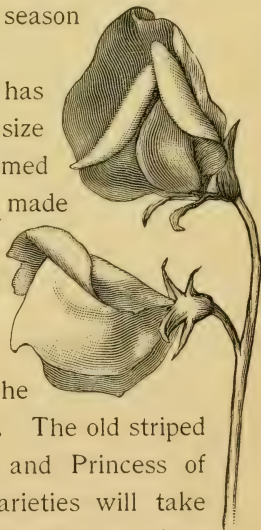


call it, it is the most popular of all the Sweet Peas. The history of the Miss Blanche Ferry may be in place here. It was first discovered by

W. W. Tracy of Detroit in a humble country yard in a limestone region in New York State, and was so dwarfed that its bright blossoms were at first taken to be those of some Geranium. Growing in the shallow layer of soil above the limestone rock, it had taken on a pink brilliancy that still gives it the lead among all the pink and white Sweet Peas. It has practically displaced the old Painted Lady.

Now, up to this year Mr. Eckford has received the Royal Horticultural Society's first-class certificate and award of merit on seventeen out of forty-two of his varieties. To these are now to be added nine novelties, the merits of which another season will prove in this country.

In certain cases Mr. Eckford has simply given improved form and size to old varieties, and has newly named them. The old Black he has made into the Monarch. The old salmon-buff Crown Princess of Prussia he has now made into the Venus, the finest introduction last year. The old Adonis he has carried up into the Miss Hunt. The old striped varieties are now the Senator and Princess of Wales, etc. These improved varieties will take the place of the old as fast as their price brings them within the popular reach. In new shades and colors Mr. Eckford has given us more than a dozen varieties. His Orange Prince, Countess of Radnor,



Primrose, Boreatton, Dorothy Tennant, Splendour, Mrs. Gladstone, Lady Beaconsfield, Indigo King, and Imperial Blue are all especially remarkable in their originality of color or shade, and some of these he is still improving in size and form.

The seedsman cannot exclude old varieties from his list. The public will decide that by their patronage. In recommending lists of varieties the same colors may be had in cheaper form, or the improved size for an increased price.

The florist is especially interested in the white varieties. Before the Mrs. Sankey was brought out there had been but little improvement in the white. And the Mrs. Sankey having a black seed and the expanded form made its advent very interesting. The old white, with white seed and common form, had perhaps shown some little improvement in size, but nothing that was remarkable under ordinary culture. Just now the rivalry is like some of the other races we are having. The Mrs. Sankey has made an unique place for itself, but the Emily Henderson now bids for a leading place as a white-seeded white. And this

coming season Eckford's new Miss Blanche Burpee, which is also a white-seeded white of large form, will enter the race.

A little fact which ought to go into the history of American varieties is that the novelty now offered as American Belle was shown as a sport at the Springfield show in 1893, and, as a compliment to a lady botanist of that city, was, for the day, called the Mrs. Owen. The California originators had it in bloom first, and have had a voice in giving it its present name.

This leads to a point of great importance in the floral world, both in the interest of the seedsman and the public. Both parties want a standard list of varieties, and want all synonyms reduced to their correct names, and the entire list made perfectly fair toward all parties. A list can be of no value to the floral world if seedsmen attach names which merely advertise their own house.

When a flower is developed into a large number of varieties and becomes a popular competitive and exhibition flower it is necessary to know what is what, and have standard names. To avoid disputes as to

correct names, and as to who shall have the right to name a variety, either the claim to priority should be established before some prominent horticultural society, or the originator should have his novelty recognized and named at some regular horticultural show. Only such should have either the recognition of the trade or the confidence of the public. And only in this way can we avoid the chaos of floral nomenclature.

A COMPLETE LIST OF SWEET PEAS.

The following is a complete list of all the varieties known by the writer at this date. The Eckfords are indicated by an *. The varieties which have received an award of merit or a first-class certificate from the Royal Horticultural Society are noted. Those followed by (1894) have just been exhibited in England, but are not yet offered to the trade.

1. ADONIS. Rosy-pink. Small but good.
2. ALBA MAGNIFICA. A strain of common white.
3. AMERICAN BELLE. A new sport of Blanche Ferry, with blotched wings and almost scarlet standard. Is offered this year by W. Atlee Burpee & Co.
4. *APPLE BLOSSOM. Shaded pink and rose. Large and well named.
5. *BLANCHE BURPEE. (1894.) A very large pure white from white seed. (Award of Merit.)

6. *THE BELLE. (1894.) Not described.

7. BLACK. (Invincible Black.) Dark maroon-brown standard, wings blue.

8. BLANCHE FERRY. (Blushing Bride, Improved Painted Lady.) Very popular; pink and white. An American variety.

9. BLUE EDGED. Still listed, but does not hold distinct from Butterfly.

10. *BLUSHING BEAUTY. Soft pink of expanded form.

11. *BOREATTON. Very dark. Deep maroon self.

12. *BRONZE PRINCE. Not listed by Mr. Eckford now.

13. BUTTERFLY. White, blue edged, shaded and laced later with blue.

14. *CARDINAL. Intense crimson-scarlet.

15. CAPTAIN CLARKE. (Tricolor.) White, standard penciled and flushed with carmine, wings blue edged. Often sold for Lottie Eckford by mistake.

16. *CAPTAIN OF THE BLUES. (First Class.) Noble flower. Standards purple-mauve, wings pale blue.

17. CARMINE INVINCIBLE. A beautiful strain when grown from reliable seed.

18. *COUNTESS OF ABERDEEN. (1894.) Very pale pink. Large flower.

19. *COUNTESS OF RADNOR. (First Class.) Pale mauve standards, wings pale lilac. Very fine.

20. CARMEN SYLVA. Of the Vesuvius order.

21. CROWN PRINCESS OF PRUSSIA. (Salmon, Flesh.) Light blush, opening with buff standards.

22. *DELIGHT. White, with standard at first crested with crimson, which becomes very softly diffused. This should not be confounded with Fairy Queen.

23. *DOROTHY TENNANT. (Award of Merit.) Puce-violet or rosy-mauve. Large.

24. *DUCHESS OF EDINBURGH. Scarlet, flushed crimson, frequently with marbled edge.

25. *DUCHESS OF YORK. (Princess May.) (1894, First Class.) A delicate shade of pale lavender, darker when expanded. Large.

26. *DUKE OF CLARENCE. Rosy-claret. Large.

27. *ELIZA ECKFORD. (1894.) Not described.

28. *EMILY ECKFORD. A large flower, fading from reddish-mauve into blue.

29. *EMPRESS OF INDIA. Pink and white. Of less merit than Blanche Ferry.

30. EMILY HENDERSON. A new American variety, pure white, and of marked substance, having all the excellent points of the Blanche Ferry, of which it seems to be a sport.

31. *EXCELSIOR. (1894.) A new scarlet.

32. FAIRY QUEEN. White, with fine lines of carmine on the standard.

33. *FIREFLY. Glowing crimson-scarlet, of good size and substance. Best scarlet up to 1893.

34. *GAIETY. White, delicate stripes softest pink.

35. *HER MAJESTY. A very large, showy, bright rose-pink.

36. IGNEA. Corresponding nearly to the true Invincible Carmine.

37. *IMPERIAL BLUE. (Grand Blue, Invincible Blue, Imperial Purple.) Blue, shaded mauve.

38. *INDIGO KING. A dark maroon-purple shading into indigo. Notched standard.

39. *ISA ECKFORD. (First Class.) Creamy white, suffused with rosy-pink.

40. *LADY BEACONSFIELD. (Award of Merit.) Soft salmon standard, wings primrose yellow. Distinct and beautiful.

41. *LADY PENZANCE. (Award of Merit.) A very bright pink, beautifully laced with rose. A superb flower.

42. *LEMON QUEEN. Large, almost white, with a very soft tinting of lemon and blush.

43. LIGHT BLUE AND PURPLE.

44. *LOTTIE ECKFORD. Not what is commonly sold. Was introduced as a creamy-white with blue edge. Mr. Eckford this year gives this name to a new variety having pale mauve standards, the wings white, beaded with soft mauve.

45. *METEOR. (1894.) Bright orange-salmon, wings light pink.

46. *MISS HUNT. Pale carmine-salmon standards with soft pink wings.

47. *MONARCH. (First Class.) Bronzy-crimson standards, rich deep-blue wings. Large.

48. *MRS. ECKFORD. (Award of Merit.) A grand flower. Delicate shaded primrose.

49. *MRS. GLADSTONE. (First Class.) Opens a buff and soft pink, and becomes a beautiful pale blush.

50. *MRS. SANKEY. (First Class.) Black-seeded white. Of largest and finest form.

51. *NOVELTY. (1894.) Very large. Scarlet, orange-tinted standard.

52. *ORANGE PRINCE. (First Class.) Of well-earned fame. Bright orange-pink. Effect when bunched very striking.

53. *OVID. Rosy-pink with rose margins.

54. PAINTED LADY. (Nellie Jaynes.) Old popular Pink and White.

55. *PEACH BLOSSOM. Salmon-pink standards, upper half shading into buff-white, wings soft pink. Distinct.

56. *PRIMROSE. (First Class.) Near approach to yellow. Pale primrose, but deeper than Mrs. Eckford.

57. PRINCESS BEATRICE. Rose-pink of much merit. Improved form. Comes between the Gladstone and Hunt.

58. *PRINCESS OF WALES. (First Class.) Shaded and striped mauve on white ground. Large.

59. *PRINCESS VICTORIA. Similar to the Duchess of Edinburgh, but larger.

60. PURPLE. A rich shade coming between Boreatton and Black.

61. PURPLE AND BLUE STRIPED.

62. PURPLE BROWN. Comes in a dark-striped form.

63. *PURPLE PRINCE. Maroon shaded with bronze and purple. Ought to give way to the Duke of Clarence.

64. *QUEEN OF ENGLAND. Ordinary white.

65. QUEEN OF THE ISLES. (Invincible Red Striped.) Scarlet ground, white stripes.

66. *ROYAL ROBE. Delicate pink, but very close to Blushing Beauty. Of large size.

67. RISING SUN. Curious mixture of orange and rose, shaded carmine; wings pale rose, shading to blush.

68. SCARLET INVINCIBLE. Good scarlet for the popular trade.

69. SCARLET STRIPED. White ground, red stripes.

70. *SENATOR. (First Class.) Large, bold flower. Shaded and striped chocolate on creamy ground.

71. SPLENDID LILAC. Standard bright pink, wings shaded lilac.

72. *SPLENDOUR. (First Class.) Superb flower of rich, bright rose color.

73. *STANLEY. (Award of Merit.) A repetition of the Boreatton, although larger under favorable conditions.

74. *THE QUEEN. Dull pink standard, wings light mauve.

75. *VENUS. (Award of Merit.) The finest introduction last year. Salmon-buff variety of improved form and size.

76. VESUVIUS. Standards shading into violet, with crimson spots.

77. VIOLET QUEEN. (Princess Louise.) Pink standard, violet wings.

78. *WAVERLY. Rosy-claret standards, blue wings shaded rose.

79. WHITE. (An English white offered as Snow Queen.) Common white ; averages well.

80. PERENNIAL PEA. (*Lathyrus latifolius*.) Can be had in Red, White, and Pink and White. No mention is made of the original varieties, on which the writer has been at work five years.

81. LORD ANSON, BLUE. (The white is of no account.) A small true blue, good for a mixed row. Not fragrant. Early.

82. LATHYRUS TINGITANUS. A rather pretty crimson climber. Blossoms early.

THE LATEST ECKFORD NOVELTIES.

The twelve new varieties which were tried by the writer last summer are a good criterion for judging Mr. Eckford's work on this flower. He offered to the trade only six of these last year, but as a special favor sent the entire twelve to the writer. In addition to six offered the year before, it seemed like an almost incredible production of new varieties, and was a bold challenge to the flower public to judge his work.

The following are the names and fuller descriptions of the twelve seen in this country for the first time last summer :—

BLUSHING BEAUTY, a soft, light pink, about the same shade as the Mrs. Gladstone, but of the larger, expanded form ; DUKE OF CLARENCE, rosy-claret, like the Purple Prince and Monarch in form, but more of a wine color than either of those ; EMILY ECKFORD,

a reddish mauve when it first opens, and on the first day closely resembles the Dorothy Tennant, but they part company in color after that, and the former then approaches, as Mr. Eckford says, a true blue,—it is characteristic of all the blue Sweet Peas that they are not blue till about the third day ; FIREFLY, the intensest scarlet-crimson variety we have yet had, and of excellent size ; GAIETY, supposed to be a white flower striped and flaked with bright, rosy lilac, but with us part of the blossoms have a clear red stripe, and the rest have had very faint lilac markings,—it either does not hold to the description or is not remarkable ; LADY BEACONSFIELD, not a loud variety, but of very high quality, remarkable for its primrose-yellow wings, and having a soft, 'salmon-blush standard ; LADY PENZANCE, one of the most striking and pleasing of all, the entire flower being a beautiful lacework of bright rose-pink, and of improved size ; OVID, another pink variety with margins of deeper rose ; PEACH BLOSSOM, a buff-pink, the buff on the standard fading almost into white ; ROYAL ROBE, a delicate pink of fine form, but slightly different from Blushing Beauty ; STANLEY,

a deep maroon, and promised to be a large flower, which it probably is in England, but with us has been no improvement on the Boreatton ; VENUS, a beautiful salmon-buff, and the best variety out this year.

A year ago we could hardly judge of the six varieties then offered as novelties, but this year we have seen just what they are. These are the DOROTHY TENNANT, HER MAJESTY, IGNEA, LEMON QUEEN, MRS. ECKFORD, and WAVERLY. The Mrs. Eckford leads the list, and is a primrose-yellow of splendid form. Her Majesty is a beautiful rose, a shade softer than the Splendour, and larger. Lemon Queen hardly holds to its name, because in twenty-four hours it has faded into white, but it is large. Dorothy Tennant is a fine mauve several shades deeper than the Countess of Radnor. Waverly at first can hardly be told from Captain of the Blues, but while the latter changes into blue, the former holds its rosy-claret color. Ignea is a crimson-scarlet, a shade deeper than Firefly.

This may be said, that the last two years' introductions prove that Mr. Eckford has mastered the

problem of improving the Sweet Pea. We want them as fast as he can give them to us. At the same time, the demand for the entire list will be confined to only a few seed-houses, and here and there a collector of varieties. Everybody who wants fine Sweet Peas ought to have some of them.

Of the twelve which the writer tried last summer, the six which will for the first time be offered to the trade this season are the Lady Penzance, Stanley, Royal Robe, Lady Beaconsfield, Ovid, and Peach Blossom. For all of these Mr. Eckford will get two shillings six pence for a sealed packet of twelve seeds.

No truly fair judgment can be passed on these unless they are grown under as favorable conditions as they have been in England. The writer feels enthusiastic in their praise, even under the somewhat unfavorable conditions of a severe New England climate. But his own success did not equal that of some grown in one of the Pacific States. There they took on larger size and were far more prolific. One season is not sufficient to try them, for they need to

be acclimated. Another thing : many people are willing to pay the price of Mr. Eckford's novelties, but they want to know how to succeed in germinating and bringing them into bloom. No seedsman can put the shadow of any warrant on his high-bred seed. The buyer must take far more risk on it than on any common seed. In appearance, the more one pays for Sweet Pea seed, the more worthless it looks. This is the price we pay for a good thing, and we must bestow fourfold more care on it to bring it to anything.

How shall this seed be treated ? It is often small, shriveled seed of low germinating power, and has come from a milder climate than ours. We can trust our plump, acclimated seed in the early spring ground, but not these.

The main point is in germinating them. Get them an inch high and they can be transplanted with safety. I shall use next year eight-inch flower pots to start them. Do not germinate them in a hot-house or a super-heated room. They need just a little milder condition than they would get out-doors. Plant them the time of planting out-doors, and as soon as

They are an inch high set them right out, unless they seem to need a little hardening off. I transplanted mine this year about the third week in April, which would ordinarily be late for this latitude. Of course, seed of low germinating power needs to be favored with extra heat to force it a little, but as soon as it starts it should be held back rather than forced. In order to have Sweet Peas bloom abundantly, we must make haste slowly.

In sowing the seeds in pots, use a garden soil that will not bake too hard. The depth at which they are planted in the house is not as important as out-doors, since the reason for shallow planting out-doors is that the sun's warmth may reach the seed.

The drainage and porous nature of pots keep the soil from being over water-soaked. Let the sun supply the heat. This expensive seed does not germinate very uniformly, so that care is needed in picking out plants not to injure others just sprouting. In no case break the Pea from the young seedling, and use a dibber in transplanting, so as to give the tap-root its natural depth.

After they are properly transplanted they are hardy enough, and nothing but cut-worms need be feared.

In the complete list of varieties given in another chapter there will be noticed nine varieties marked 1894. These were shown in London last summer, but Mr. Eckford has not sufficient stock to offer them to the trade for at least another year.

SELECTING A FEW VARIETIES.

Everybody used to have the Painted Lady ; but now the popular favorite is the Blanche Ferry, or its Boston synonym, Blushing Bride. These and the Blue-edged Butterfly make a pleasing bouquet.

But you ask for the best ten or twelve of the cheaper varieties ; to give you a good, economical row, I would name Adonis, Black, Blanche Ferry, Butterfly, Captain Clarke, Carmine Invincible, Crown Princess of Prussia, Imperial Blue, Indigo King, Mrs. Gladstone, Mrs. Sankey, Queen of the Isles. If you want to add another twelve without much more cost, I would say,

Apple Blossom, Boreatton, Captain of the Blues, Countess of Radnor, Duchess of Edinburgh, Miss Hunt, Orange Prince, Primrose, Princess Beatrice, Princess of Wales, Senator, and Splendour.

If you want a few of the very choicest of Sweet Peas up to date, take the following list :—

Blanche Ferry, Blushing Beauty, Boreatton, Countess of Radnor, Dorothy Tennant, Firefly, Her Majesty, Lady Penzance, Mrs. Eckford, Mrs. Sankey, Orange Prince, Venus.

THE SEED GROWER.

Four years ago it was not thought that Sweet Peas could be successfully grown for seed in this country. But we have been driven to it by the demand, and it is a success. It is estimated that one hundred tons of seed was sold in the United States in 1893. Previous to this revolution in seed growing we depended on England, Germany, and France for our Sweet Peas; and for our purest stocks of some old varieties we are not yet independent of those countries. Our Pacific coast is certainly giving us fine seed. One grower writes me that next year he expects to get from two to five ounces of seed from each vine of the novelty sorts by giving them plenty of room. Each ounce represents from sixty to seventy pods. There were more than one hundred acres planted to Sweet Peas on the California coast this year. In New York State the experiment of growing the seed was tried by an

old culinary pea seed grower, and though the first year barely returned the seed planted, the experiment seems to be a success now. Michigan is still in the experimental stage, and Canada is growing Blanche Ferry and Emily Henderson. Our large seed-houses have their trial gardens, and some of them adopt the excellent practice of sending the carefully selected stock of varieties which they wish grown to special growers. It requires two years at least to get a stock of Eckford's novelties in this country, but our growers have worked wonders already in supplying the American seed trade with the finest Eckfords.

It is not to be wondered at that with the success that has attended this experiment there should also be some murmurings. It is going to be a problem how to grow the varieties in large quantities and keep them pure. The writer believes this can be done, and will in fairness to all parties hold the position of an impartial critic. Simply as an amateur specialist, he will judge all seed that comes under his notice by the most exacting standard. It is not the province of this little book to tell how to grow a hundred acres of

Sweet Peas. The conditions of growing for seed, even in a small acreage, are quite different from those under which they are cultivated for the enjoyment of three months' bloom. But the writer believes that, whatever the acreage, every pound of seed stock from which next year's crop is to come ought not to have a "rogue" in it. A small percentage of the purest seed will revert or break away from the parent variety, and in the general stock which the grower expects to put on the market I do not see how he can make every hundred pounds of a given variety absolutely pure. The public ought to bear the inevitable patiently. But here is a flower which comes wonderfully true from seed, considering how irresponsible and uncertain other flowers are. And the grower can do one thing which will reduce the mixed condition of things to the smallest minimum: he can grow his own seed stock entirely separate from his trade stock, and can give that which he is to plant next year every possible advantage to make it reach its best estate; and he can mercilessly eradicate every "rogue" vine that appears in it. And in this way he can not only

hold the Eckfords at their best, but carry them on to higher perfection.

He can put expert labor and skillful attention on one acre at least, and subject that acre to the demands of the very highest standard of "rogueing" and culture. We sincerely hope that the mere demand for cheap seed may not deprive our flower patrons of the privilege of getting the very best by paying what it costs to grow it.

Of course, a large acreage that must be harvested at the least expense must be driven along with the one idea of making seed, and must be grown so as to ripen uniformly, but should be grown so that the vines will reach a natural maturity and a vigor of growth and abundance of bloom that will show the crop has not gone to seed too rapidly.

We believe that however rich the soil may be, the vines will, if the pods are left on, mature in good season and in a uniform way. This is all different from what the amateur wants. He wants his vines to be making fresh growth as long as possible, for the sake of a long season of bloom. With plenty of plant

food and the pods kept picked, the vines will take care of that.

Now there ought to be some growers who will be constantly working for the improvement of the stock by special culture, and by throwing the strength of the vines into a few of the best pods.

We see no advantage in doubling the Sweet Pea, although it frequently shows a tendency that way. But size and substance, and more blossoms on a stem, are points of great value in the improvement of the Sweet Pea.

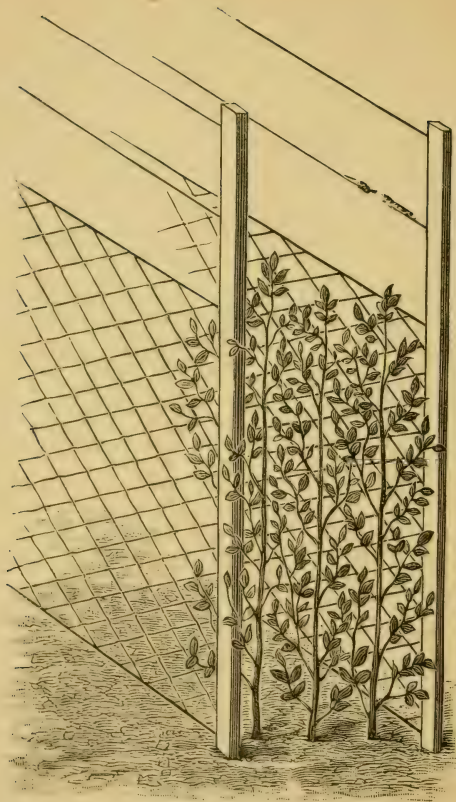
The question of support or no support for the vines of a large field of this flower is one that confronts the grower. I cannot quite satisfy myself that field culture with no support is going to keep the seed stock at its best. I certainly think that the grower himself, who wants to perpetuate a first-class seed stock, should give to that part which he is to use for his own planting more favorable attention than he does to the general crop which will be consumed by the public. It would seem to be practicable to grow a portion every year especially for seed, and to give these at

least the benefit of a few vines, that the natural climbing habit may be somewhat favored.

A photograph just received of the trial garden of Sweet Peas of a large Detroit house shows a model form of trellis. The plants are in triple rows, and all along on either side four-foot poultry wire is firmly stretched, with framework at the end to brace it. Wire is cheap and stakes are easily driven, and even four wires on a side of triple rows would give sufficient support. If you give them six-foot brush they want it all, but if they find nothing higher than four feet they adjust themselves accordingly.

We would not advise anyone to launch out on this extensive growing of Sweet Pea seed without a great bump of caution. Yet we rejoice at the present remarkable outlook.

This flower has come into the front rank, and the increasing demand will soon make our present acreage of seed growing far too small.



TRIPLE ROWS WITH POULTRY WIRE FOUR FEET WIDE
ON BOTH SIDES.

A WORD TO SEEDSMEN.

This flower is to be popularized, and grown under its distinct variety names, probably more than almost any flower. Since it comes so true from seed the public will soon know what the best varieties are, and demand seed that is strictly true to name.

A seed-house that values its reputation will not sell for Boreatton seed that is three-fourths Black, nor sell Butterfly for Miss Hunt, nor Beatrice for Mrs. Gladstone. Now that the flower has a literature, specific information of its true names and descriptions will be staple matter for the floral and trade journals.

The recent popular demand for seed has hardly given our large growers time to acquaint themselves with the standard list, so that some of our most reliable seed-houses have been misled this past year. But it will be seen that it is far from their own interest to either be deceived in or send out by mistake

seed of a flower like this, which is now being grown so largely by amateurs under its specific variety names. Mr. Eckford has had to protect his reputation by disclaiming anything sold as his varieties without his trade stamp on a sealed packet. And after this year our responsible seed-houses, and back of them our growers, will have no excuse for not getting pure seed stock, and at least giving the public the guarantee that their seed is as true to name as it can be when only one or two generations removed from Mr. Eckford's guaranteed stock. We can have every variety as true as the Blanche Ferry.

Fifty-two thousand copies of the little book, "ALL ABOUT SWEET PEAS," went out last year, and now, followed by this book, a beginning is made toward popular intelligence and a knowledge of this flower that will sharpen the vision of thousands, and put many a buzzing bee in the seedsman's bonnet if he does not fill his orders with true seed.

But, my amateur friend, be patient with the seedsman. His interest and yours are identical. Don't go at him tooth and nail. Give him a year every time

to remedy what you show him is wrong. He is far more anxious to please all his customers than you alone are to be pleased. Try to create in your community a definite knowledge about names and true descriptions, so that the seedsman will have all the more reason to cater to an intelligent trade.

We especially want to appeal to all our seed-houses to help by all fair means to keep the nomenclature of Sweet Peas free from all names but such as the trade generally, or our responsible horticultural societies, are willing to recognize.

And we are likely to have a good many new varieties in this country from "sports" that our peculiarities of soil and climate develop. And there may be question as to who has prior claim, and the right to name them.

We are very glad that W. Atlee Burpee & Co., instead of naming the new "sport" which they bring out this year after some member of their family, call it the American Belle, a name which no firm will object to using.

Personally we think that, all interests of the

trade considered, it is better in naming new varieties to select names that will not be objectionable to other seedsmen.

SWEET PEA SPECIALISTS.

We broach the question whether America is not now ripe for the undivided enthusiasm of SWEET PEA SPECIALISTS. We do not limit this to merely ardent amateurs. Indeed, all grades of Sweet Pea lovers are wanted. But every district in this country that is far enough along to have any kind of a flower show, and especially every State or section of a State that boasts a horticultural society, should have one or more persons to champion the Sweet Pea and exhibit it at its best. And, further, a great field is now opening to expert florists to here and there turn attention as a specialty to this flower. We are likely to have a great deal of cheap seed in this country. You can buy cheap Pansy seed, and you can buy it also for thirty dollars an ounce. So also of Sweet Peas. We do not expect the name and prices of Mr. Eckford are going to long represent the only Sweet Pea specialist,

although he has done the pioneer work in showing us what this flower amounts to. I do not imply that even an expert florist can in any short time get the points and begin to reap success; but here is a great flower, and here is a great country and continent to be supplied. And we are passing out of the old five-cent seed business into higher tastes, and broader requirements to satisfy them. A mixture of Sweet Peas that costs three times the price of the old cheap mixture is now bought with avidity, and a popular interest is now developing in the new-named sorts.

AS AN EXHIBITION FLOWER.

The time has now come when the public should see Sweet Peas at their best, and when they should enter the lists among other highly cultivated flowers. The Massachusetts Horticultural Society in Boston has led the way for several years. The conditions on which entries are made there on Sweet Pea day are simply that there shall be thirty varieties separately bunched with fifty stems of each. Sometimes they are solid bunches of blooms, and again others loosen them out with their own foliage. The prizes are six, four, and three dollars, with an occasional special prize, like the silver vase taken last year by William Patterson of Quincy, Mass., for the best two exhibits in three years.

Last year this Society introduced a new class, admitting bunches of six stems each, to meet the case of the latest expensive varieties.

The Hampden County Society gave a Sweet Pea day at Springfield, Mass., last July. The first prize was ten dollars. A complete exhibit of all the varieties was made, including the latest novelties.

No score of points on this flower has yet been adopted. Mr. Eckford, in writing of a standard to judge them by, says they should have, "for self flowers, standards bold, large, finely rounded, and of good substance, fully expanded and quite smooth, not lippy; wings large, smooth, and sufficiently expanded to form a center to the flower, but not so much so as to unduly expose the keel; shade of color bright and uniform. For fancy flowers, whatever the ground color, the stripes or flakes should be uniform and distinct."

None can realize how remarkable the Sweet Pea is in coloring till they see such varieties as the Orange Prince, Radnor, Primrose, Boreatton, Splendour, Venus, etc., bunched. With seventy-five different bouquets setting each other off, the effect is very beautiful.

An exhibit, to have educational value, should have

every variety carefully labeled—the Eckfords by themselves and the latest varieties prominent. And yet the arrangements by colors must not be spoiled. Varieties which have been awarded special recognition should be so marked.

Exhibitions should be made within a month after the vines have come into bloom. It is yet too soon for competent judges to be found. They will come as soon as exhibits can be produced that call for close judging. The latest novelty may be inferior to many of its predecessors, but a judge who passes it by had better lapse into a mere spectator. A judge who allows a lusty bouquet of some common sort to eclipse a few stems of something that has cost ten times the amount of money and patient labor needs coaching. Especially in judging a flower of the refined qualities of the Sweet Pea the closest familiarity with its delicate shades is needed, and an eye that, at a glance, can discern a sport or any candidate for a new name. It is hoped that this book will help toward exhibits of real merit, and awaken in many minds a desire to make a close and full study of this flower.

MONSTROSITIES IN SWEET PEAS.

The recent higher cultivation of this flower has developed some abnormal growths. It is not likely that the doubling of the Sweet Pea will be tolerated, although we now frequently have the standard and wings thus doubled. Like the Pansy, it would be no improvement in the blossom to thus change it. As a nodding flower of delicate grace, it must be the edict of refined taste that it shall remain in its single simplicity. We cannot tell what it may yet attain in size, and, for that matter, it may be questioned whether it can be called an improvement to make it very much larger than the finest Eckfords are now. Something will, doubtless, yet be done toward enlarging the standard, although it has now been expanded into nearly a circle. It seems well nigh to have reached perfect size and form. Where, then, shall the future improvement be? There is abundant room for it to go into

the substance of the blossom. Still more is there unlimited room for adding to the number of blossoms on a stem. In this latter we have made great advance, and we also have monstrosities in double stems that give us occasionally seven blossoms, and quite frequently five. But four blossoms on a single stem is now a very common occurrence, and a good strain of the Splendour will give nearly fifty per cent. of such. The normal development of the Sweet Pea must be as a bouqueting flower, and the two points open to greatest improvement in the future will thus be the substance of the blossoms and the number of blossoms on a stem, while holding on to the present improved form and size.

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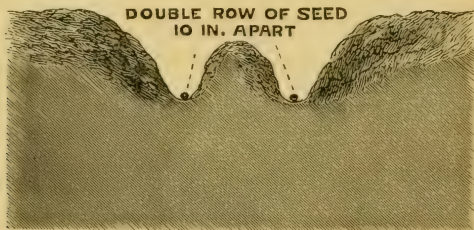
SOIL AND PREPARATION.

Do not get the idea that any particular soil is necessary for Sweet Peas, or that the preparation of the ground is a difficult matter. Any one who has a sunny strip of ground can have fine Sweet Peas. If you have a garden of tolerably rich loam that has been well worked to a depth of twelve inches, just hoe out little double furrows ten inches apart and five inches deep, choosing the sunniest place, running the row north and south.

Here is what Mr. Eckford says about preparing the ground: "If not already tolerably rich, a liberal dressing of thoroughly decomposed stable manure should be dug in some time before the ground is wanted,—leaving it rough—what gardeners call rough-digging,—and allowed to consolidate before sowing."

But I shall assume that I am now giving directions to amateurs, who want to know how to prepare

the soil from the very beginning. If you have only a yard filled in with coal ashes and tin cans, you may smile at the difficulties and have the finest of flowers. You can always dig a trench, and put into it just the right compost and soil. Especially with Sweet Peas,



Where the garden soil is already rich enough, hoe out double furrows like this. Cover seed one or two inches at first. After they are up fill in till ground is nearly level. Do not cover crowns of plants.

where only a narrow strip wide enough for a row is wanted, is this easily done.

If you have the sunshine and a place to dig, you may supply the rest perfectly.

Now, while a soil inclining to clay is more natural to this flower, and makes success easier, still, it is not

essential. It probably makes a more compact and moist soil, and the young vines do not seem to suffer so much from the prevailing blight in such a clay loam. The writer has never had a clay soil, although he would prefer it. His present ground having been about as poor as it could be to begin with, his method of preparing it may not be uninteresting.

At this moment his eight hundred feet of rows have just been cleaned up, bushes and vines bunched, and the soil is being prepared both for next spring and also for two years ahead.

Just where the rows were this year I get the ground ready for two years ahead. I trench these about fourteen inches deep, and fill in with livery stable manure, so that when trod down there are six inches of it solid. The old soil is filled in above. This will be left until a year from next spring. And even then my care will be, in spading up those trenches, to keep the top soil free from fertilizer, and to keep the rotted manure down where it belongs. That can easily be done, when the time comes, by shoveling to one side the upper six or seven inches of

soil and then stirring the rich bottom soil, covering it a little, preparatory for the seed, with the top soil, and following rules for planting.

But after these trenches are thus prepared for two years ahead, I shall go over the ground and get the trenches for next spring ready. As I plant my rows each year, there is a space of about four feet left between them. The rows next year come in the middle of the spaces that were left clear this year. The same piece of ground is thus used year after year, the next year's rows simply coming between this year's rows. This space of four feet is none too much to give comfortable room for walking between the rows when the vines are in full bloom.

Now, in preparing for the rows that are to be planted next spring, much the same process as that described will be gone through, although instead of putting into the trenches fresh stable manure I shall use something that will be all ready for plant-food next spring. Of course, if you have been making it the rule to manure the trenches two years ahead, they will be ready for planting when the time comes. But

I am now speaking of a case like my own, where the soil is not up to where I want it; and so I shall make sure that where the rows come next spring there is nothing that will burn the tender vines or ferment around them, and yet that there is a good supply of food deep down where the vine feeds.

Neither plowing nor ordinary spading goes deep enough. In preparing for Sweet Peas, especially in light soil, you want to lay the top soil off for six or seven inches, and then work in what you can safely use for fertilizer in the sub-soil. Treat the top soil merely as a covering or mulch. Into my trenches for next spring I shall put about three inches of tobacco stems, and above that work some bone flour into the soil. Besides this, I shall put the richest of the soil into the bottom and bring the lightest to the top. After I get the practice of manuring two years ahead under way, it will be a simple matter to get ready for each spring's planting. My experience teaches me that, with all the pains I take, I must still guard against having anything of a rank or heating nature about Sweet Pea vines. It is a wonder to me how a

vine that loves the cool spring and autumn so well can be in full bloom in July and August ; but it loves sunshine above if it can have coolness and moisture below. I have known people to manure their ground for Sweet Peas in the spring and to spade it in without special care, and to succeed ; but there is such a large percentage of failures that it is evident no premium can be put on carelessness

Now, we have been describing rather an extravagant method of growing this flower. How shall anyone who can have but a ten or twenty-foot row, and whose yard consists of the refuse fillings of a city lot, prepare a bed ? If you plant a piece of turf ground, first remove the sod a width of four feet, that the grass may not draw on your fertilizer. Then, if you have taken time by the forelock, and are preparing in the autumn, you can put into the bottom of your trench even a partially decomposed compost or manure, and let the trench lie partially open during the winter. But if you wait till spring you will need to make doubly sure that your compost or manure is thoroughly decomposed, and that only the unfertilized top soil is

allowed to come in contact with your vines above the roots. It doesn't matter how little richness there is in the upper five inches of soil, although after your vines are up, and this top soil is filled in, it should be somewhat trodden or firmed.

This kind of culture implies that you intend to keep the pods off, and your vines growing until October.

One special advantage of trenching is that you can cut off all the robber roots that come from your fruit and shade trees to steal the fertilizer and moisture of your Sweet Peas. This I find is one of the most serious hinderances to thrifty vines. I sometimes have fine rows sapped of their life, and before the season is half over, unless they are watered with some rich liquid, they show every sign of being starved.

Now I have tried to emphasize the need of a rich sub soil, and of a top soil that can in no way injure the early, tender vines. We must plant deep to meet droughts, but our practice of filling in the soil for about five inches about the vines seems somehow to burn or rot them when they are tender, and as a preventive

we must have that top soil as free as possible from everything upon which the June heat can have a bad effect. Just what it is that rots them we do not know. Our rows are often decimated, apparently less in a clay than in a sandy soil; whatever the cause is, about the first of June seems to be a critical time.

It will at least be a partial remedy to keep the soil as cool as possible about the vines.

FERTILIZERS.

In the chapter on "Soil and Preparation" we have given some of the most essential hints, which need not be repeated under this head. Good stable manure must always stand first among fertilizers, as, when liberally used, it feeds the growing vines and accumulates a good body of humus or vegetable matter in the soil, which holds moisture. Horse and cow manures have their relative values, but, like all natural manures, need to be composted and given time to be well decomposed before being applied to Sweet Peas. With comparative safety, however, they can be spaded in in the fall, even if somewhat fresh, although it is hardly best to put a considerable body of such fresh manure into the bottom of a trench. Sweet Peas need to have the soil kept as cool as possible consistently with the process of vegetable assimilation.

Though cow manure is cooler, horse manure is

richer in fertilizing constituents, and if properly composted will be all right. If the only manure you can get is still fresh, spade it in a little to one side of the vines, where its richness may, during the rains, soak through. Or if you think your ground is not rich enough, and you have nothing else, give a good soaking of soapsuds every week; but don't apply this until your vines are three feet high. You will find unleached wood ashes or anything rich in potash specially good to make the woody growth of vines and stems; but apply these things some time before the time to plant. Bone flour is a staple article for florists, and works especially well with some form of potash.

One can go into the subject of special fertilizers and formulas for preparing them; but for common amateur work, outside of good stable manure, thoroughly rotted and composted, such simple articles as unleached wood ashes and bone flour are excellent. A little basic slag phosphate (odorless phosphate) sprinkled over the manure renders it more soluble and destroys root-eating insects which attack the plants.

The writer hesitates about advising the use of nitrate of soda except by skillful gardeners.

If you have had much experience in flowers you already make a practice of preparing a good compost heap and keeping a stock of thoroughly decomposed plant food on hand. Such a pile, rich in stable manure and a year or two old, is ready then at any time; or plan your Sweet Pea row two years ahead, and fill in a trench as full of fresh stable manure as you wish, and let it lie there until another year. Don't take any stock in the idea of your fertilizer leaching through the soil and being lost.

As long as the moisture in the ground is drawn upward, the dissolving plant food will not go the other way. The safest place to keep manure is in the ground, provided trees and weeds are not allowed to steal it.

TIME FOR PLANTING.

No rule is more imperative in Sweet Pea culture than early planting. The market gardener understands the nature of common Peas, and he will take advantage of even premature spring weather to get his Peas in. It is not because he is impatient with the tardy season, but because they need to make root-growth in the cool, moist spring ground. The only thing to wait for is for the winter frost to get out of the ground so that it can be worked. All this applies as well to the Sweet Pea. It wants to start almost as soon as the Crocus wakes up.

We suspect that those people who succeed best with Sweet Peas are the ones who enthuse at the sight of the first Pussy Willows, or who feel an answering thrill to the first bluebird's note.

One needs an element of impatience in order to be on time in getting their Sweet Peas in. The same

bounding impulse that catches up the first pretty Houstonia, or peers into the sunny corner where the Anemone peeps out, also hears the Sweet Pea seed rattling with impatience to get out of its winter prison. The Corn and the Cucumber demurely say, "Don't plant us till it is time to 'make garden,' " and flower seed has to wait its turn. But not the Sweet Pea. Flower though it be, it is as hardy as a Dutch maiden, and gets the color on its cheeks by being the first out-doors. (With many people Fast Day is the regular time for planting, and that is all right where Fast Day does not take the chances of a late Easter).

Of course, the time of planting is first dependent on latitude. The fall is the time for the Gulf States. The great California growers plant in February. Whatever the latitude, do not be far behind the Crocus bloom in getting your seed in. The earliest life that spring wakes up is the harbinger to notify you to plant your Sweet Peas. While it may not be too late for a month after it is time to plant, we think those that are planted first will give the most abundant bloom. In England Mr. Eckford advises planting a succession,

and we may to some extent do that here. The latest seed ought not to go in later than a month after the winter frost is out of the warmest part of your garden. Fifty miles north or south makes a difference of a week or more. In the latitude of New York city the second or third week of March would be planting time.

Your rule ought to be something as follows: The sunniest place in your garden is where you should plant Sweet Peas, as there the winter frost will be out earliest. The first bright day after you discover that you can work that sunny spot of ground is the day to plant, whether it be the middle of March or the middle of April.

Now, why so early? Because each variety of seed was for a wise purpose made to germinate at its own special temperature, and the Sweet Pea germinates at a low temperature. Then it needs to make its own peculiar root growth, so that it will be at its best in the most trying summer months. For five or six weeks it grows slowly above ground, and will run to vines unless at this period it is working below ground rather than above. It seems to need these first six

weeks to steady it down, so that it will bloom instead of running into a rank vine. Certainly the abundance of bloom seems to depend on the earliness of planting.

No matter when your neighbors plant their Sweet Peas, rest assured the most successful growers watch for the earliest day to get their seed in.

But what if there are black frosts and snow-storms after they come up? Ah, they are as happy as a boy in a snow bank, and it requires a freeze well on down toward zero to injure them.

If you pity them, on cold nights throw some old sacking over them.

For questions of fall planting see next chapter.

IN THE SOUTHERN STATES.

Fall planting should be the rule anywhere south of the frost belt. Our Southern friends may have beautiful Sweet Peas. It is useless for them to conform to our Northern time for planting, and it will be safe to cover the seed to the full depth at which it is to remain. They will probably have to be content with a shorter season of bloom.

North of the Gulf States the time for planting should be governed entirely by the first indications of spring. Plant as early as it is possible to get any kind of seed in. February will be the best month for quite a belt of States, and for such States, even though the winter is mild enough for fall planting, the seed will probably do as well planted in February. And the precautions necessary at the North about covering the seed lightly would not apply in States where winters are mild.

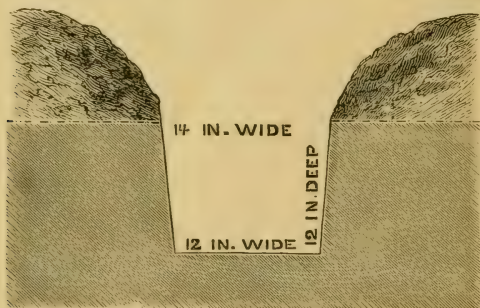
DEEP PLANTING.

The rule in this country has varied from four to six inches, with mulching above that. Read the chapter on "Soil and Preparation" before you ask how deep to plant.

Consider that when Culinary Pea vines have in midsummer mildewed and dried up, the Sweet Pea must be at its best, full of blossoms, and still branching and growing. It must be grown in the way that will best save it from summer drought. Three inches depth with mulching may do in moist England; five inches or even more are better here. And the mulching in either case is a grand thing. We may prepare our trench or hoe out our furrows at the depth we decide on. But now how shall we cover the seed? The rule of covering the seed lightly at first does not apply to all cases. It would not apply in the Southern States, where the ground never gets very cold. It

would not apply in the North if one waits till the coldest part of the spring is past before planting.

The reason for covering the seed lightly at first is that here at the North our early spring ground is cold, and the seed should not be deeper than the sun's warmth can reach them.

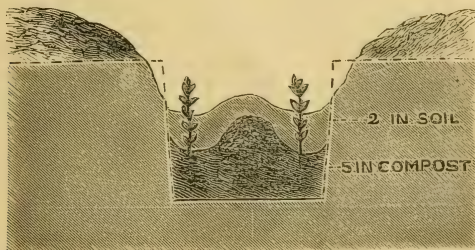


TRENCH AS FIRST DUG.

Quite often, however, people cover them six inches at once, and if they have located them in the warmest part of the garden and in warm soil, they will have no trouble. Indeed, by following the rule of light covering it may sometimes be disastrous, for in a wet place the alternate freezing and thawing of the

seed may possibly rot them. Six inches down in a comparatively warm soil there would be no danger of this. I am satisfied this rule of covering the seed only an inch needs adjustment to circumstances.

In a short row it would be well to cover lightly and lay a board on top for two weeks, so that the



TRENCH AFTER PLANTED.

nightly freezing might not reach the seed. If your soil is light, two inches' covering would be well.

Still, throughout the Northern States, as a rule, our early spring soil is cold and wet, and to bury seed more than an inch away from the sun's warmth is a risk.

Then, after the plants are up, comes the filling up

of the trench. It is not best to be in any haste about this. In no case cover the crowns of the plants. And this top soil which is brought up to the vines ought to be entirely free from anything that can possibly injure them. If only a light loam, into which no fertilizer has recently been put, is used for this top filling of the trenches, we think there will be little trouble about the vines dying.

Please remember, then, that the rules of depth and light covering are very adjustable. Light or heavy soil largely governs.

Two weeks' difference in time of planting may make the rule imperative or doubtful.

DROPPING THE SEED.

Some successful amateurs like to sow their Sweet Peas in rather a loose single row, about an ounce of seed to ten feet. I much prefer to plant in double rows, so as to bush between. By this latter method the rows will be ten inches apart; and hereafter, instead of dropping the seed in straight lines, I shall drop them in a looser way, using enough seed to allow for quite a percentage of failure.

How thickly to sow the seed depends on the expensiveness of the seed. If you buy the cheaper mixture by the pound, sow it liberally, and, after it comes up and gets by the cut-worms, thin out. But if your mixture or collection of varieties is of the higher-priced seed, you will want to make it go as far as possible.

It is necessary at first to ask, How near together should the vines stand? There is no question in my

mind that we are crowding our Sweet Peas too closely together. Three inches apart in the row is better than less, and for varieties that cost five cents per seed, six inches apart will pay.

The Sweet Pea is a branching plant and should be given more room for that reason. We shall have as many blossoms with the vines three inches apart as with them two inches, and the blossoms will be larger, because the vine is more stocky.

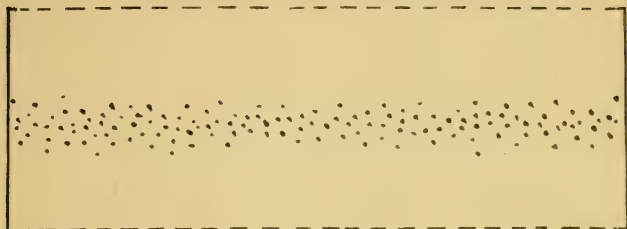
But in sowing our seed we must calculate on the failure of some to germinate, and we had better reckon in the cut-worm tax, and, lastly, there are the chances of the blight taking some. Moles trouble mine and break a good many vines off at the root.

Now, I shall sow in double rows, dropping the seed loosely along on each side of this trench, of the cheaper seed fifteen or twenty peas to the foot. But after they are past the usual dangers they should not stand nearer than three inches apart.

They must have room for their branching habit. In August, your vines fill the bushes out so fully that you forget how scattering the plants seemed in May.

TRENCH WITH SINGLE ROW OF SEED.

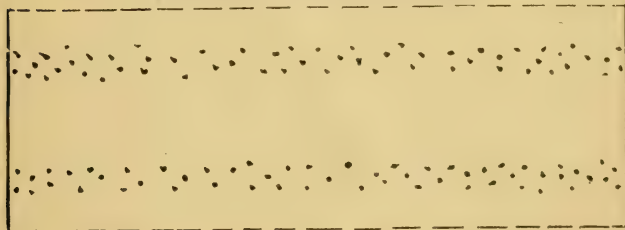
NO. 1



OUNCE TO 10 FT.

TRENCH WITH LOOSE DOUBLE ROW.

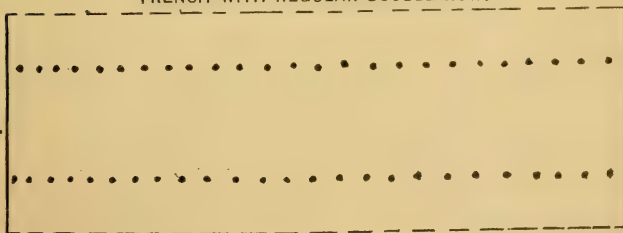
NO. 2



OUNCE TO 10 FT.

TRENCH WITH REGULAR DOUBLE ROW.

NO. 3.



OUNCE TO 24 FT.

DROPPING THE SEED.

TRANSPLANTING.

This is an important topic, especially with regard to the very expensive, imported varieties. And, indeed, it might be well for some amateurs to transplant their entire row. If you have trouble in making your Sweet Peas germinate in the place you want your row, it is a perfectly simple matter to sow the seed in some sunny nook, or even in a cold frame or box, and when they are an inch high transplant them to the row.

If the trench is not ready when the time comes to sow Sweet Peas, just go ahead, and plant them in any warm corner, and that will give you two or three weeks to get the trench ready, when you can transplant them. If you do this, begin very early. And in handling the seedlings do not break off the seed pea nor break the tap-root. Do not run the risk of having your row half a failure from the start, but,

after sowing your row, sow some more somewhere else from which to fill up all vacant places.

In regard to the expensive English novelties, we must start them in the house or cold frame and transplant them. See chapter on their culture.

The only trouble in transplanting is with the long tap-root. A long, narrow trowel is needed to lift them. They may sometimes have a root four inches long. A dibber is very useful in setting them. Set them at just the depth you found them.

BUSHING AND TRELLISING.

There are all degrees of success in growing Sweet Peas, and the answer to the question of what kind of support to give them depends largely on how thrifty your vines are. I expect my own vines to make a strong growth, at least six feet high, and besides the matter of height, it is quite evident that such a weight of vines when wet, and when the strain of a gust of wind comes broadside on them, will require a very strong support. If you care for only moderate success, smaller bushes or four-foot poultry wire may be sufficient. If your soil has neither depth nor richness, and you provide a six-foot hedge of birches, your bushes will be more conspicuous than your Sweet Peas. Or, if you neglect your vines, and let them go to seed, they will dry up when two-thirds grown. Or, if you plant them too thickly, they will make a spindling and shorter growth. You are the one to decide whether you want a four- or a six-foot support.

Then, if you ask what to make the support of, judging from most people, you will use that which comes most convenient.

Here are the points to be considered in a support for Sweet Peas. Grow them at their best, and provide for both height and strength. Then allow for their loose, branching habit, and give them width enough to ramble. While a six-foot single trellis of poultry wire running between the double rows is passably good, it cramps the vines, and I would prefer to plant the seed in a triple row, and set four-foot poultry wire on each side of that triple row. If they grow above that, a few strands of wire will give the tops something to cling to. Or, if you still prefer to use a single support of six-foot poultry wire, frame it up well, and tack on to the posts short cross pieces, from the ends of which stretch wires to hold the vines well up to the poultry wire.

I use birches entirely. They are brought to me in twelve- or fourteen-foot lengths, just as cut from the patch, and from each of these I get one good stout one seven feet high, and the lighter top is used to fill in.

These are set with a crow-bar firmly in the middle of the double row, and should be trimmed a little. They are less unsightly if the tops are clipped to an even six-foot level, and the sides are trimmed sufficiently

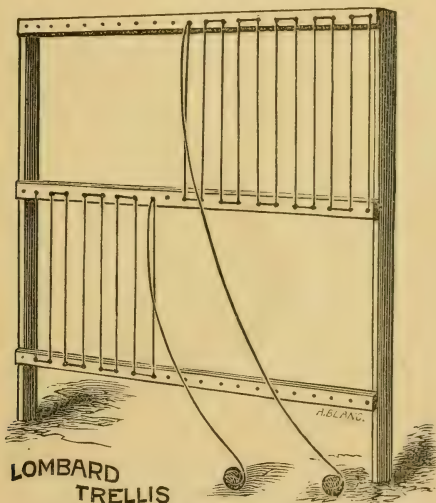


TRENCH AFTER THE BRUSH IS SET.

to present a neat view from the end. These twiggy birches are a more natural support, and in the scorching sun do not heat, as wire will. Of course, birches last but one year, and should be procured early in the

spring before their leaves start. Make ashes of them in the fall.

There is no limit to the styles of trellis that can



Simple frame, with twine carried from one small nail to another.

be made, and they should be so made as to take apart easily for storing away in the winter. By painting the ground end of the posts or uprights with asphaltum

they will last longer. The printed designs are mere suggestions of what can be made cheaply. It ought hardly to be necessary to set the trellis up before the vines are ready.

The posts need not be so large but that a crow-bar will suffice to set them, and thus digging is avoided. In constructing your trellis, judge by the sweep which the wind has how near your posts should be set. Be somewhat over-cautious about the danger of your beautiful hedge blowing down, for that would be a serious calamity. The time to bush or trellis your vines is as soon as you have filled your trench in, and the tendrils begin to reach out for support. Keep your vines green and growing as long as you can. Good, rich ground, and keeping the pods off, will do this; and when the vines get above six feet, clip off the tops, and they will send up new branches.

WATERING.

We advise patience all the way through in cultivating Sweet Peas. Do not begin to water them before it is necessary. Occasionally an early drought may make it necessary ; but as a rule it is not well to begin before the summer droughts strike them. Much depends on what kind of soil you have, for, of course, if the drainage is good, water will not harm them. Still, do not vent your impatience on them, and drown them because they seem to grow so slowly. Unless you have reason to believe that the ground is getting very dry in May, do not try to hurry them along.

On the other hand, look out for summer drought. There is but one way to water Sweet Peas when they need it, and that is to soak the ground thoroughly. A mere surface sprinkling is of little benefit, for the water is needed down where the roots are.

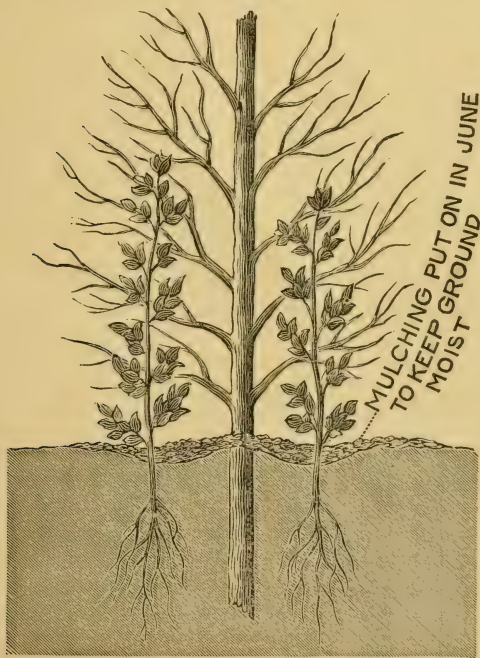
They do need plenty of moisture after they begin to grow rapidly. Leave the ground a little hollow along the row, so that water can be poured on by the pailful, or that the hose with the nozzle removed may run a full stream and thoroughly soak the ground. Do not turn the hose on to your foliage in



TRENCH AFTER BEING FILLED IS LEFT A
LITTLE HOLLOW.

the sunshine or wet your blossoms. After the bloom is on the vines water only at the roots. If you mulch the ground an occasional thorough watering will last a good many days. You cannot hasten your vines along by watering in April or May. You don't want to. After they begin to grow rapidly above ground, you

can then know they will both feed and drink bountifully. Water in the evening.



MULCHING.

Use old leaves, pine needles, lawn rakings, any fine litter that has no weed seed in it.

THE ROT OR BLIGHT.

Just what it is that causes the tender green bark of the vine to become slimy and to decay for a few inches above the root is not yet very clear. One investigator says, "The shriveled stem is due to a cryptogamic disease which attacks the plant just above the surface." He recommends deep mulching and frequent applications of soapsuds to enable the plant to resist the attacks.

We advise caution in using soapsuds when the vines are tender—not to apply it strong. A practical English grower recommends a spraying of diluted nicotine, one part of nicotine to ten of water.

But we hope every one who is interested in this troublesome disease will consider the common-sense means of preventing it.

All Pea vines love a cool soil for their root growth. They want plenty of sunshine above, but coolness

and moisture and a slow feeding process below. The study is how to give them the plant food they need, and yet keep the ground cool after the summer heat comes. And especially must we study how to keep that part of the soil cool which comes in contact with the tender vines above the root. The root itself, while it should have only thoroughly decomposed manure about it, will still bear more fertilizer than the tender stalk above it. We think if the upper five inches of soil which comes in contact with the vines is entirely free from everything like fermenting manure there will be little trouble from the decay of vines. And if above that there is a good mulch to shade the ground and hold the moisture, the soil which comes in contact with the vines will be kept still cooler. The danger of the vines decaying lasts only while they are tender. After they begin to get their stocky growth well under way they feed more rapidly and will stand the disease.

If they begin to die down, watering will not save them; indeed, it might increase the decay. It might be well for you not to fill the trench in more than two

inches above the seed until the base of the vines have become somewhat hardened to the weather, and along the first of June, after they show a stocky body and start into more rapid growth, bring three inches more of soil up to them and put on the mulch. I speak of this simply as an expedient, for the letters that have come to me indicate that last year there was an exceeding bitter cry over the decimation of vines by blight. The rule of firming the ground around the vines would also have a tendency to keep the soil cool and moist.

If your vines show a serious indication of decaying, whatever you do, don't apply anything to them which under June heat will raise the soil temperature around them. Keep them cool anyhow. .

You might try the experiment after they are a few inches high of laying some narrow boards close up to them to shade the ground for a time. And keep cool yourself, for you are likely to have as many vines as there will be room for when they have branched and rebranched into their August thriftiness.

SWEET PEAS OUT OF SEASON.

The writer has just read in a botanical work one hundred years old that Sweet Peas were grown in pots a century or more ago. It seemed to have been a favorite method for getting extra early blossoms. We have seen them germinated in pots and transplanted in the open ground. We have seen them grown to three feet in height in pots, and the whole ball of earth and vines turned out into the garden. But the full-grown vine has such a modest root that there would seem to be no reason for taking them out of the pot.

We think the fall planting of Sweet Peas must be left to mild climates; not but what such seed may in our Northern States either come up in the spring or the small vines be wintered with some protection, but even if they survive the spring-planted seed comes into bloom just about as early. They are easily grown in the greenhouse in winter.

I still believe there are cheap ways in which they can be forced in something analogous to a cold frame. If, for instance, a trench running east and west, in some

sunny, sheltered place, were dug, and the southern side of the trench were slanted off to let the sun's rays in, and the northern side kept sheltered, and glass be used to germinate them, and then cloth be kept for a night covering as long as frosts lasted, it seems to me blossoms may be had in May.

I have tried rolling up small paper pots, and filling a shallow box with them, and dropping a seed into each.

They have been germinated in the house, and the paper pots set into the garden at regular planting time ; but the season held them back, so that nothing was gained.

QUESTIONS.

1. Why do vines make a rank growth and have no blossoms ?

Answer.—Gross feeding, especially with a good supply of rain, drives all tall peas to vines. And probably lateness in planting causes a quick germination and too rapid a start. One of the advantages of early planting is that it gives them a slow start, and steadies

them down to a virtuous habit, which is quite sure to give bloom. Such a naturally thrifty climber easily makes a vice of rank growth. If planted early, it will make a good root, and will be held back above ground for six weeks. That holds it down to duty, and to almost certain abundance of bloom.

2. Why does a percentage of seed, when either planted or put to soak, fail to swell?

Answer.—We would say, at first, that it is old seed if it does not swell. But I do not consider that the reason. Seed a year old sometimes seems to have this fault. I think the real reason is that it is stored in too dry a place. It gets baked. It stands to reason that the seed of this flower, which is so nearly hardy, would naturally lie in the ground through the winter. Much of our Sweet Pea seed is stored away for eight months in an unnaturally warm place. I believe cold storage will largely remedy this.

3. How many seeds are there to the ounce?

Answer.—Of the old plump, acclimated varieties there are about 425 seeds to the ounce.

Of the small, shriveled varieties there are some-

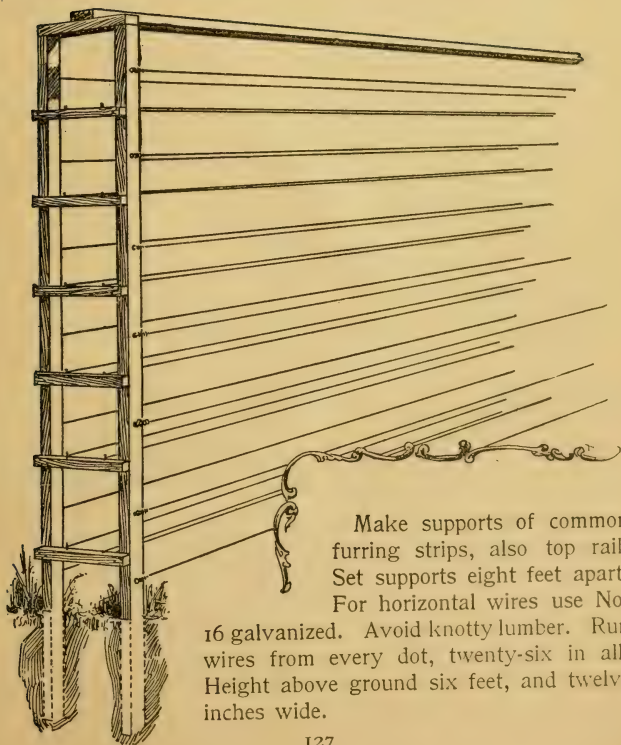
times 600 or more. The light mauve varieties, like the Countess of Radnor, have the smallest seed. Plumpness of seed is no sign of quality. The cheapest seed looks the best.

4. Can seed be saved from a mixed row?

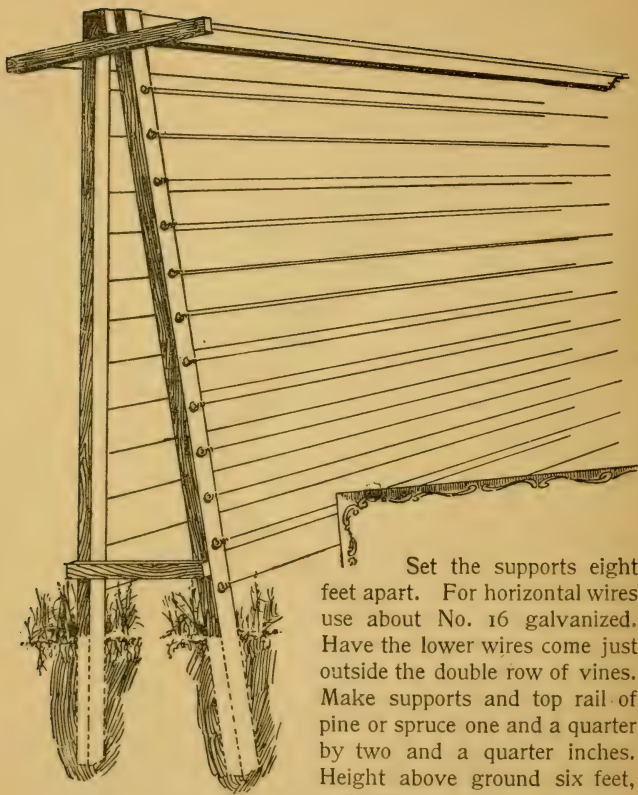
Answer.—Why, it will germinate and you will get blossoms. But after picking blossoms all summer it cannot but be inferior seed. And only the commonest sorts would probably appear next year. A florist would not want it at any price. And now that the finest varieties are being grown in such quantity by large seed growers, the price of the best is already remarkably cheap.

5. How about soaking the seed?

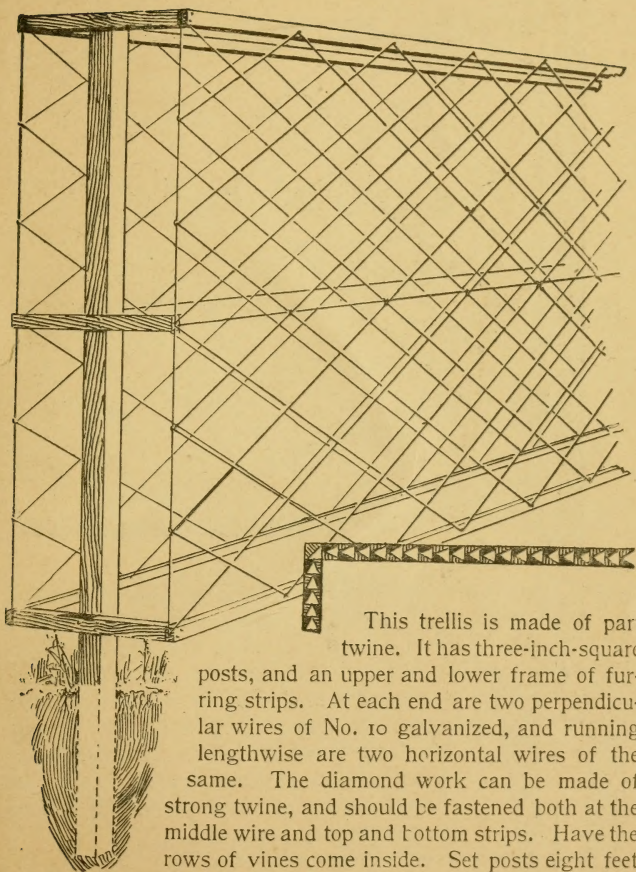
Answer.—The only objection to doing this is, that if you follow the rule of early planting the ground is comparatively cold and wet, and to put seed already soaked into cold, wet ground is likely to rot it. If it should prove to be an unusually dry spring, or if you are a week or two late in sowing the seed, a previous soaking would not be hazardous, and might hasten germination.



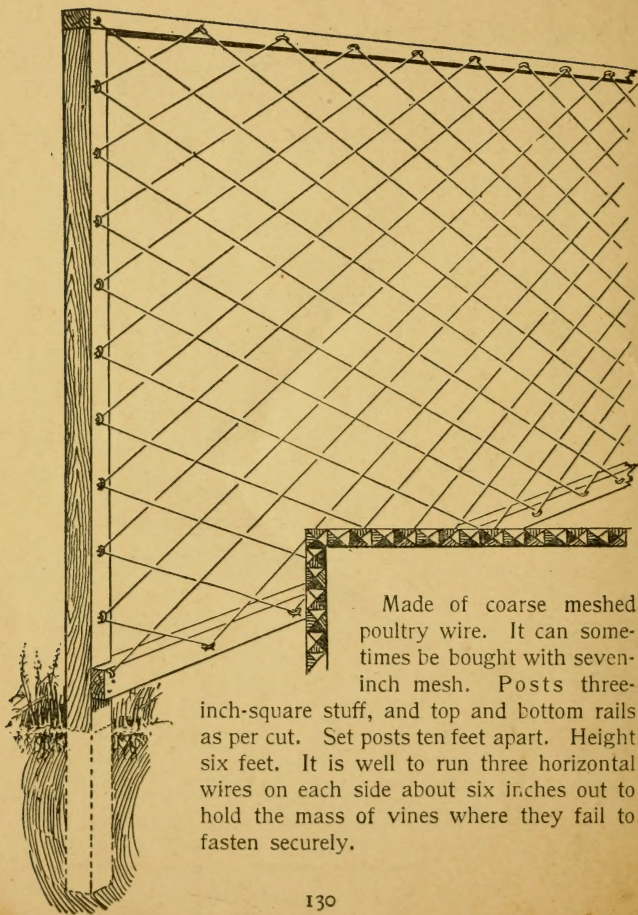
Make supports of common furring strips, also top rail. Set supports eight feet apart. For horizontal wires use No. 16 galvanized. Avoid knotty lumber. Run wires from every dot, twenty-six in all. Height above ground six feet, and twelve inches wide.



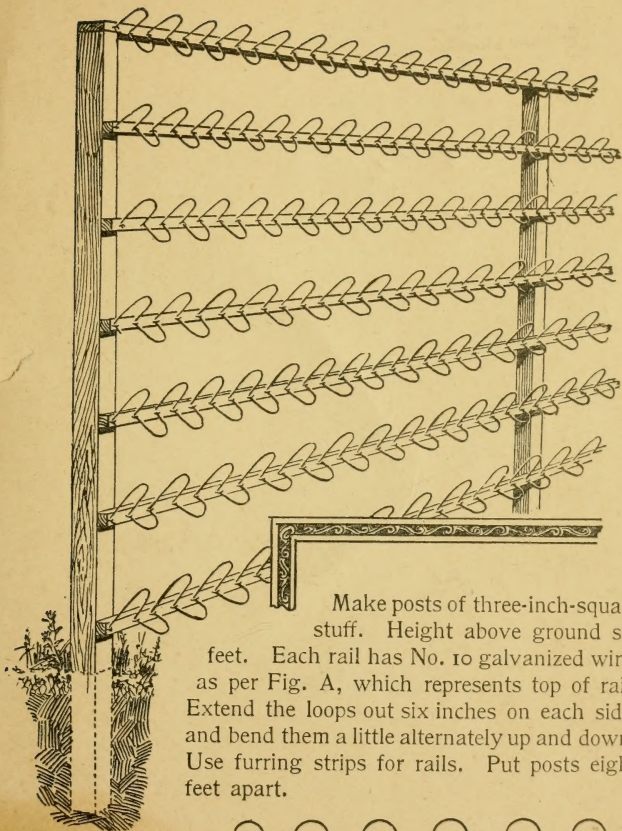
Set the supports eight feet apart. For horizontal wires use about No. 16 galvanized. Have the lower wires come just outside the double row of vines. Make supports and top rail of pine or spruce one and a quarter by two and a quarter inches. Height above ground six feet, and twelve inches wide at base.



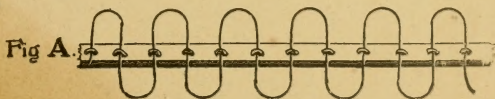
This trellis is made of part twine. It has three-inch-square posts, and an upper and lower frame of furring strips. At each end are two perpendicular wires of No. 10 galvanized, and running lengthwise are two horizontal wires of the same. The diamond work can be made of strong twine, and should be fastened both at the middle wire and top and bottom strips. Have the rows of vines come inside. Set posts eight feet apart. One foot is enough for width.



Made of coarse meshed poultry wire. It can sometimes be bought with seven-inch mesh. Posts three-inch-square stuff, and top and bottom rails as per cut. Set posts ten feet apart. Height six feet. It is well to run three horizontal wires on each side about six inches out to hold the mass of vines where they fail to fasten securely.



Make posts of three-inch-square stuff. Height above ground six feet. Each rail has No. 10 galvanized wire, as per Fig. A, which represents top of rail. Extend the loops out six inches on each side, and bend them a little alternately up and down. Use furring strips for rails. Put posts eight feet apart.





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